

# Arizona Medicine

*Journal of*  
ARIZONA STATE MEDICAL ASSOCIATION



MARCH, 1948

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**THEELIN** is a *pure crystalline* estrogen. Since it is not a mixture and does not contain extraneous substances, its physiologic effectiveness is accurately determined by weight.

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## ARIZONA MEDICINE

MARCH, 1948

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Vol. 5, No. 2



*Designers of Fine  
Eyewear Since 1916*

**GEORGE W. SPRATT OPTICAL COMPANY**

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HORTON, PETERS and Blumenthal (Proc. of the Staff Meetings Mayo Clinic July 11, 1945) state, "Our clinical experience with use of the new drug D. H. E. 45 in treatment of 120 patients who had migraine, indicates that it is a safe and efficient preparation to use in aborting acute attacks of headache."

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DANNENBERG (Permanente Foundation Med. Bull., July, 1946), "We found dihydroergotamine tartrate was completely free from toxic or sideractions in the series of patients treated."

FRIEDMAN and FRIEDMAN (Ohio State Med. J., Dec., 1945), "In favorable cases, dramatic relief from the migraine symptoms can be obtained within 20 to 30 minutes following intramuscular administration of 1.0 mg. of D. H. E. 45."

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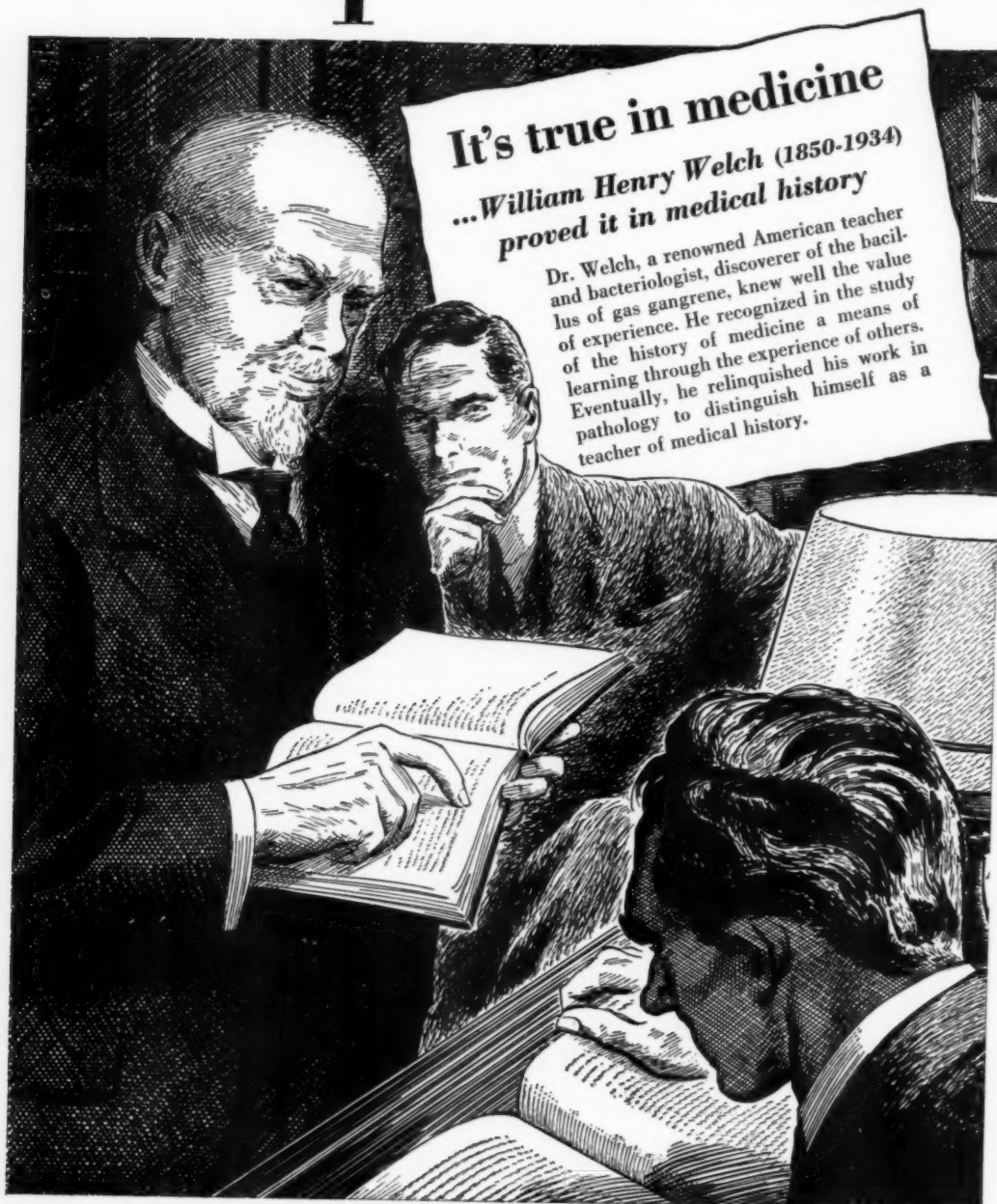
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# Experience is the



# best teacher

**It's true in cigarettes too!**

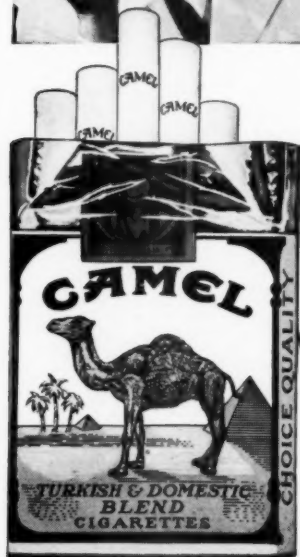
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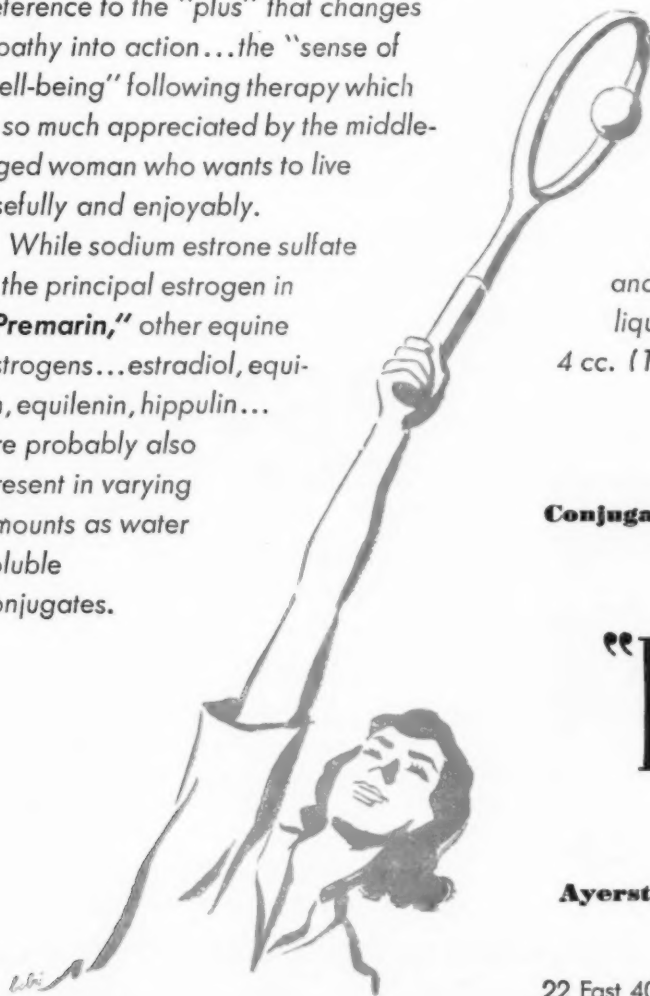
## middle age + verve

Verve or apathy in middle age? For the menopausal patient this is usually determined by the degree of relief from the distressing symptoms so often associated with declining ovarian function.

Gratifying and prompt remission of disturbing symptoms may be obtained with "Premarin."

Outstanding among comments made by patients receiving this naturally occurring, orally active estrogen, is the reference to the "plus" that changes apathy into action...the "sense of well-being" following therapy which is so much appreciated by the middle-aged woman who wants to live usefully and enjoyably.

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Three potencies of "Premarin" enable the physician to fit the dosage to the individual needs of the patient: 2.5 mg., 1.25 mg. and 0.625 mg. tablets; also in liquid form, 0.625 mg. in each 4 cc. (1 teaspoonful).

### Conjugated Estrogens (equine)



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**EXPERIENCE AWAITING YOU!**

**A TIME SAVING DEVICE**

# It Can Happen Here

LET US FORGET—we who are of the vitamin D era—severe rickets is not yet eradicated, and moderate and mild rickets are still prevalent. Here is a white child, supposedly well fed, if judged by weight alone, a farm child apparently living out of doors a good deal. This boy was reared in a state having a latitude between 37° and 42°, where the average amount of fall and winter sunshine is equal to that in the major portion of the United States. And yet such stigmata of rickets as *genu varum* and the quadratic head are plain evidence that rickets does occur under these conditions.

How much more likely, then, that rickets will develop among city-bred children who live under a smokepall for a large part of each year. True, vitamin D is more or less routinely prescribed nowadays for infants. But is the antiricketic routinely administered in the home? Does the child refuse it? Is it given in some unstandardized form, purchased from a false sense of economy because the physician did not specify the kind?

A uniformly potent source of vitamin D such as Oleum Percomorphum, administered regularly in proper dosage, can do more than protect against the gross visible deformities of rickets. It may prevent hidden but nonetheless serious malformations of the chest and the pelvis and will aid in promoting good dentition. Because the dosage is measured in *drops*, Oleum Percomorphum is well taken and well tolerated by infants and growing children.



*Example of severe rickets in a sunny clime.*



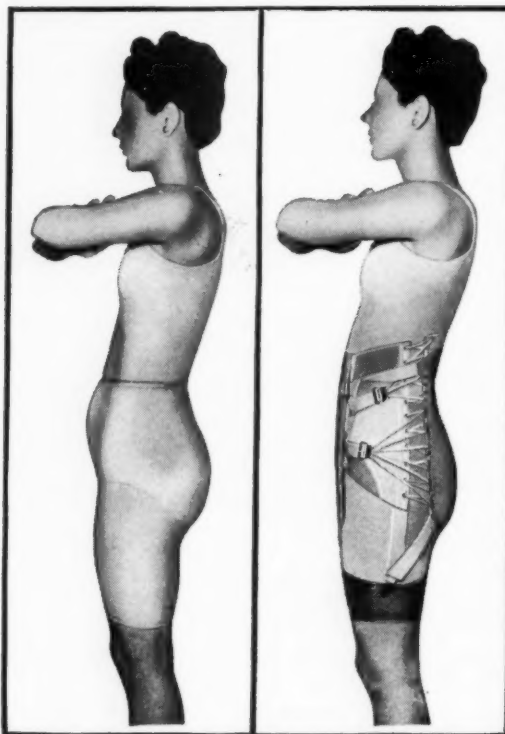
## OLEUM PERCOMORPHUM WITH OTHER FISH-LIVER OILS AND VIOSTEROL

Potency, 60,000 vitamin A units and 8,500 vitamin D units per gram. Supplied in 10 cc. and 50 cc. bottles; and as capsules in bottles containing 50 and 250.

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Please enclose professional card when requesting samples of Mead Johnson products to co-operate in preventing their reaching unauthorized persons

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Patient of intermediate type of build; roentgenograms showed spondylolisthesis, grade 1, with congenital defects. Symptoms developed after a fall on the ice during pregnancy.

Same patient after application of support. Patient reported relief from pain which was confined to the back and called attention to the ease and comfort in the wearing of the support.

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... **THE WELL BONED BACK**—Curves in and under the gluteal muscles, relieving the tension of these muscles on their attachments.

Wide shaped piece of material at top (fastening in front) holds the support still more closely about the lumbar spine.

... **THE SLIDE LACING ADJUSTMENT**—Assists in steadying the pelvic girdle.

It also allows for reinforcing with aluminum steels or Camp Spinal Brace.

The elastic releases make for comfort.

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*World's Largest Manufacturers of Scientific Supports*

Offices in New York • Chicago • Windsor, Ontario • London, England



## *Watersoaked...*



## *... and still potency-protected!*

Four packages of penicillin tablets were recently returned to the Squibb Laboratories. They had been watersoaked to a point of partial disintegration. The outside and inside of the packages were covered with mold — they had been “through the mill”. Furthermore, the tablets were outdated by four months.

*Yet on assay all but one — 39 out of 40 — of these tablets were found to be of full potency! (One tablet assayed at 50% of label potency.)*

Penicillin is rapidly destroyed by water. It must be produced in an atmosphere scrupulously moisture-controlled. This demonstration of the effectiveness of Squibb packaging methods is therefore highly significant.

## CRYSTALLINE PENICILLIN G SODIUM (*Buffered*) TABLETS

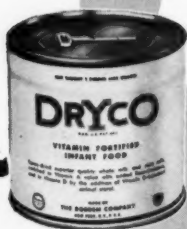
## SQUIBB

*are individually and hermetically sealed in aluminum foil to protect them against moisture and contamination. They are individually protected, regardless of how many are prescribed, up to the time of use. Tablets of 50,000 and 100,000 units in boxes of 12 and 100.*

MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858



*"In the rapidly growing infant,  
as much as one third of the protein of the  
food may be retained for building new tissues."\**



- Nutritional authorities warn that "the possibility of protein deficiency in the diets of children has received some, but insufficient, attention" . . . and that children "with normal values are the exception rather than the rule."\*\*
- Many progressive pediatricians, in prescribing formulas, standardize on the high-protein infant food, DRYCO—since it represents such a rich source of *all* the essential amino acids. DRYCO is also characterized by a high-mineral, low-fat and intermediate carbohydrate content—with more than adequate vitamins A, B<sub>1</sub>, B<sub>2</sub> and D. It is quickly soluble in cold or warm water, and may be used with or without added carbohydrates. Special processing facilitates digestion by assuring soft curd formation in the stomach.

\*BOGERT, L. J.: *Nutrition and Physical Fitness*, 4th edition, 1943, Chapter IX, p. 22.

\*\*A.M.A.: *Handbook of Nutrition*, 1943, p. 360.

#### BORDEN'S PRESCRIPTION PRODUCTS DIVISION

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DRYCO is made from spray-dried, pasteurized, superior quality whole milk and skim milk. Provides 2500 U. S. P. units Vitamin A and 400 U. S. P. units Vitamin D per reconstituted quart. Supplies 31½ calories per tablespoon. Available at all drug stores in 1 and 2½ lb. cans.

# DRYCO

*the "Custom Formula" high protein infant food*

# Dorsey

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THE MEDICAL PROFESSION

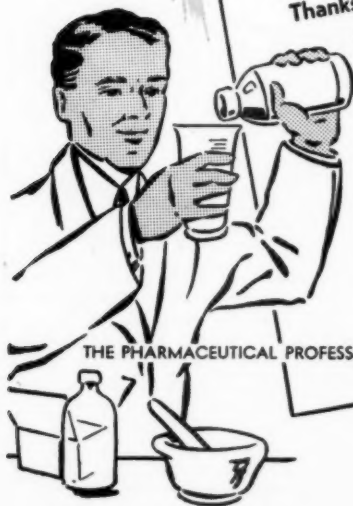
"GROWING UP" implies far more than gaining height and adding years. It means acquiring competence, assuming responsibility, forming a circle of friends, attaining maturity.

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LINCOLN, NEBRASKA  
Branches at Dallas and Los Angeles



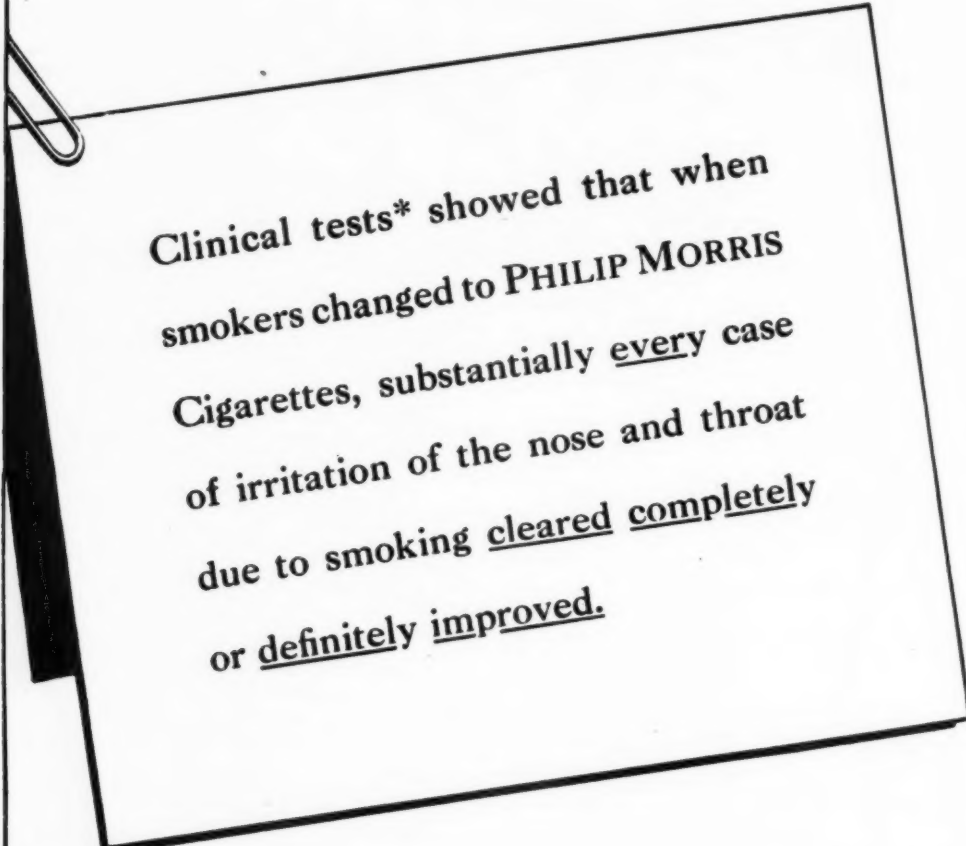
THE PHARMACEUTICAL PROFESSION



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PURIFIED SOLUTION OF LIVER - DORSEY  
SOLUTION OF ESTROGENIC SUBSTANCES - DORSEY

## 29 WORDS

tell the story...



Clinical tests\* showed that when smokers changed to PHILIP MORRIS Cigarettes, substantially every case of irritation of the nose and throat due to smoking cleared completely or definitely improved.

*\*Laryngoscope, Feb. 1935, Vol. XLV, No. 2—149-154.*

TO THE PHYSICIAN WHO SMOKES A PIPE: We suggest an unusually fine new blend — COUNTRY DOCTOR PIPE MIXTURE. Made by the same process as used in the manufacture of Philip Morris Cigarettes.



## **"Beginner's luck" isn't always good**

The good luck so often attributed to beginners can't be counted on in infancy. Here the "beginners" often meet insurmountable obstacles which have raised the proportion of infant deaths within the first 30 days to 62.1% of the total infant mortality.\* During this hazardous first month proper selection of the first formula is therefore of vital importance.

'Dexin' has proved an excellent "first carbohydrate" because of its high dextrin content. It (1) resists fermentation by the usual intestinal organisms; (2) tends to hold gas formation, distention and diarrhea to a minimum, and (3) promotes the formation of soft, flocculent, easily digested curds. 'Dexin' does make a difference.

\*Vital Statistics—Special Reports: Vol. 25, No. 12, National Office of Vital Statistics, Washington, D. C. (Oct. 15) 1946, p. 206.

## **'Dexin'** HIGH DEXTRIN CARBOHYDRATE

BRAND

Composition—Dextrins 75% • Maltose 24% • Mineral Ash 0.25% • Moisture 0.75% • Available carbohydrate 99% • 115 calories per ounce • 6 level packed tablespoons equal 1 ounce • Containers of twelve ounces and three pounds • Accepted by the Council on Foods and Nutrition, American Medical Association.

'Dexin' Reg. Trademark

*Literature on request*



**BURROUGHS WELLCOME & CO. (U.S.A.) INC., 9 & 11 East 41st St., New York 17, N. Y.**



# Tales and Details



All the keys on my typewriter are stuck. My pen won't hold ink. Brother!—the first million dollars or 100 years couldn't be any harder than a columnist's first column.

(The second one better be easier than this or I'm through—3 kids or no 3 kids!)

I'd probably never get going at all if it weren't measles season and if this column weren't about Immune Serum Globulin. This product is one of our blood fractions—HUMAN—and I write that in caps because the "human angle" in our Immune Serum Glob story is particularly important.

The fact that it's made from fresh venous—not placental—blood gives our Immune Glob three distinct advantages for passive prevention, or modification of measles:

- 1/ It's water clear and hemolysis-free.
- 2/ Non-pyrogenic; it causes no side reactions.
- 3/ Its known and constant potency of 160 mgm. gamma globulin per cc. permits low volume, adjustable dosage.

By the way, our statistics hounds have turned up some interesting figures on measles incidence—based on a study of U.S. Public Health reported cases, 1935-45. Did you realize, for instance, that 60% of all measles occur in the 12-week period, March through May?

But you're probably busy enough with those cases you have right now—and one measly column can't cover the whole story—so more next time.

*Your Cutter  
detail man*

CUTTER LABORATORIES  
Berkeley 1, California

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ARIZONA STATE NURSES ASS'N.

(CONSTITUENT OF THE AMERICAN  
NURSES' ASS'N)

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\$25.00 weekly indemnity, accident and sickness	Quarterly
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\$50.00 weekly indemnity, accident and sickness	Quarterly
<b>\$15,000.00 accidental death</b>	<b>\$24.00</b>
\$75.00 weekly indemnity, accident and sickness	Quarterly
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\$100.00 weekly indemnity, accident and sickness	Quarterly

ALSO HOSPITAL EXPENSE FOR MEMBERS,  
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85c out of each \$1.00 gross income  
used for members' benefit

**\$3,000,000.00** **\$15,000,000.00**  
INVESTED ASSETS PAID FOR CLAIMS

\$200,000 deposited with State of Nebraska for protection of our members.

Disability need not be incurred in line of duty — benefits from the beginning day of disability.

PHYSICIANS CASUALTY ASSOCIATION  
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45 years under the same management

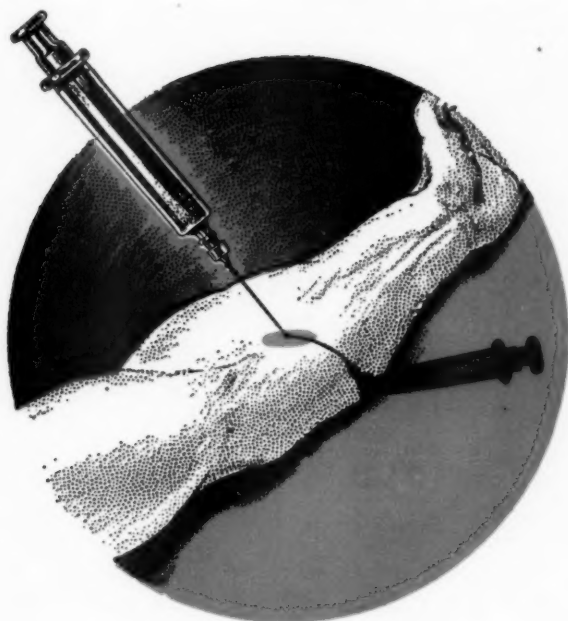
400 First National Bank Building

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## St. Monica's Hospital and Health Center

1200 S. 5th Ave. Phoenix, Arizona

Now Accepting Tubercular Patients  
in Its Contagious Wing



**FOR EFFECTIVE PROPHYLAXIS OF DRUG REACTIONS**

## **PYRIBENZAMINE**

In the prophylaxis and treatment of allergic reaction to liver extract, penicillin, the sulfonamides and certain other drugs, Pyribenzamine hydrochloride is definitely efficacious.<sup>1,2</sup>

Similarly, the administration of Pyribenzamine prior to a desensitizing dose of allergen is successful in the prevention of constitutional reactions.<sup>1</sup> By using Pyribenzamine routinely during desensitization therapy, it is possible to make greater increments of dosage, thereby reducing the total number of injections.<sup>3</sup>



1. Arbesman, C.E., et al., *Jl. of Allergy* 17:275, Sept. 1946

2. Feinberg, S.M., and Friedlaender, S., *Am. Jl. Med. Sci.* 213:58, Jan. 1947.

3. Fuchs, A.M., et al., *Jl. of Allergy* 18:385, Nov. 1947.

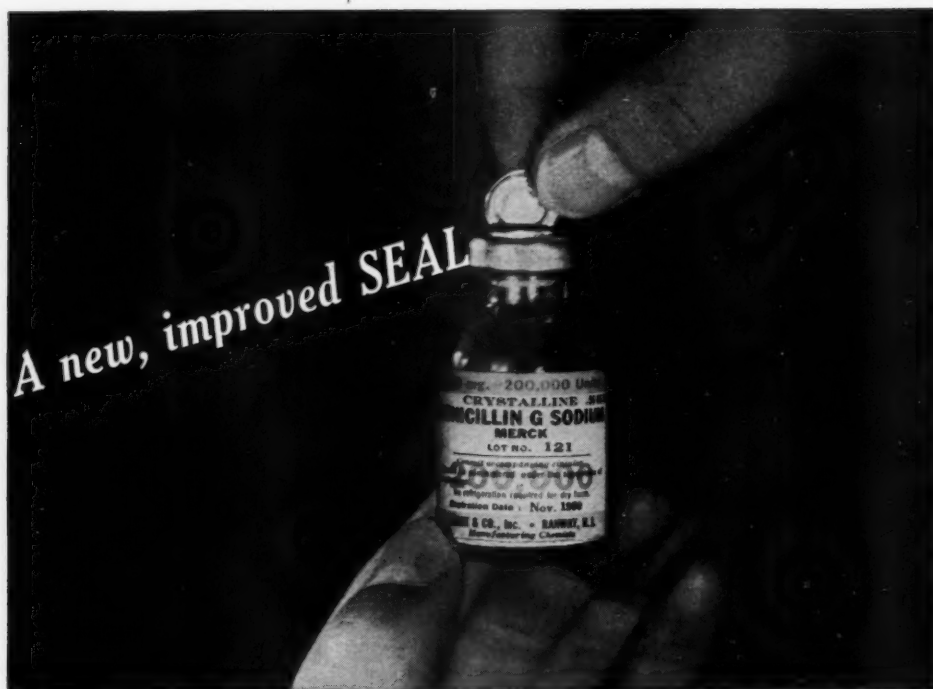
ISSUED: Scored tablets 50 mg. • Elixir, 5 mg. per cc.

# **Ciba**

**PHARMACEUTICAL PRODUCTS, INC., SUMMIT, NEW JERSEY**

2/1335

PYRIBENZAMINE (brand of tripeleonnamine) • T. M. Reg. U. S. Pat. Off.



Crystalline Penicillin G Sodium Merck is now supplied in vials with a new, improved aluminum seal.

Among the advantages provided by this new seal are:

- The round tear-off tab is easily removable and eliminates the necessity of using a knife or other implement to pry up the tab.
- The tight-fitting dust cap with skirt provides protection for the rubber stopper during storage of the vial between injections.

*Crystalline Penicillin G Sodium Merck is a highly purified product from which therapeutically inert materials have been virtually eliminated.*

*For Penicillin of the highest quality—*

**SPECIFY MERCK!**

## CRYSTALLINE PENICILLIN G SODIUM MERCK

MERCK & CO., Inc.

RAHWAY, N. J.

*Manufacturing Chemists*



**A new antibacterial agent**  
for your most resistant cases of wound and surface infections



Contains 0.2% Furacin  
(brand of nitrofurazone:  
5-nitro-2-furaldehyde  
semicarbazone) in a  
water-soluble base.



**another of its several advantages:**

**FURACIN SOLUBLE DRESSING** has proven effective in reducing the mixed infections of wounds and burns. Prior to treatment, Snyder et al.\* found heavy growth in the majority of swab-cultures from 19 war wounds and burns. Following institution of Furacin Soluble Dressing therapy,

the majority of cultures became sterile; only 4 per cent continued to show heavy growth.

#### *Indications:*

Infected surface wounds, or for the prevention of such infection  
Infections of second and third degree burns  
Carbuncles and abscesses after surgical intervention  
Infected varicose ulcers  
Infected superficial ulcers of diabetics  
Impetigo of infants and adults  
Treatment of skin-graft sites  
Osteomyelitis associated with compound fracture  
Secondary infections following dermatophytoses

**LABORATORIES Inc.**  
NORWICH, NEW YORK

\*Snyder, M. L., Kiehn, C. L. & Christopherson, J. W., Mil. Surg. 97:380, 1945.

LITERATURE ON REQUEST



## GOOD INSURANCE WHEN *Under-Nutrition* THREATENS

When increased nutrient needs, finicky appetite, or food aversions threaten the nutritional state by limiting food intake, the delicious food drink made by mixing Ovaltine with milk is employed to advantage.

This nutritional supplement proves good insurance against an inadequate nutrient intake, since three glassfuls daily brings even an ordinary diet to optimal levels. It

supplies generous amounts of all the nutrients considered essential: biologically adequate protein, B complex and other vitamins including ascorbic acid, readily utilized carbohydrate, easily emulsified fat, and important minerals. Adults and children both enjoy the delicious taste of Ovaltine. Hence it is readily taken by all patients in the recommended quantity.

THE WANDER COMPANY, 360 N. MICHIGAN AVE., CHICAGO 1, ILL.



# Ovaltine

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<sup>1</sup>Harris, S. C.; Ivy, A. C., and Searle, L. M.: THE MECHANISM OF AMPHETAMINE-INDUCED LOSS OF WEIGHT: A Consideration of the Theory of Hunger and Appetite, J.A.M.A. 134:1468 (Aug. 23) 1947.

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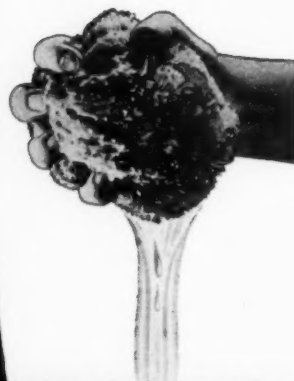
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1. Surg., Gynec. and Obst  
74:390 (Feb. 16) 1942.

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# ARIZONA MEDICINE

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## MULTIPLE PRIMARY CARCINOMAS

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WHILE multiple primary carcinomas of the human body are not too unusual, they are most frequently found involving one or two organs such as the gastrointestinal tract or the skin, or occur at different ages in the patient's life. Consequently, the following case report of a patient who had two primary carcinomas of the lung, in addition to a primary carcinoma of the prostate occurring at the same time, is of sufficient interest to justify a report.

Stalker, Philips and Pemberton<sup>1</sup> reported 113 cases found in 2,500 operations for malignant lesions; 45.1% occurred simultaneously, while 54.9% occurred at varied intervals of time separating the malignant growths. The most common multiple tumors were found in the following organs: Skin, breast, genito-urinary tract, and gastrointestinal tract. White<sup>2</sup> classified the multiple tumors into three separate groups:

1. Double malignancies of the same or symmetrical organs.
2. Double malignancies of different organs.
3. Three or more malignant tumors of the same or different organs.

This particular case report would appear to fall in Group 3. Warren and Gates<sup>3</sup>, in 1932, surveyed the literature and made a statistical study of multiple primary malignant tumors. Since that time, scattered reports of multiple malignancies in the same person, either occurring simultaneously or at separate times in the patient's life, have been reported.

### Case Report

Mr. R. D. was admitted to the hospital with a chief complaint of cough.

The present illness dated back to October of 1946. At that time, following a moderate hemoptysis, he was examined, and the cause of his hemoptysis was thought to be due to a tumor mass in the right lung. The chest X-ray re-

vealed a rounded, solitary mass in the right lower lung field. A bronchoscopy was performed at this time and reported as negative. An exploratory thoracotomy was advised, but the patient refused. Three months later (January of 1947), due to the fact that his cough had become worse, he decided to have the exploratory thoracotomy performed. He did not have further hemoptysis during the intervening time. The patient was a well developed white male, age 51, exhibiting an occasional spasmodic, dry cough. An area of dullness could be elicited by percussion in the right posterior chest. The breath sounds were suppressed over this area. The cardiac examination was negative. The blood pressure was 120/90. The abdomen was soft to palpation. There was no enlargement of the liver or spleen. The kidneys were not palpable. No masses or areas of tenderness were noted. The rectal examination revealed the sphincter tone to be of good quality. The prostate was small and firm. No masses or areas of tenderness were found. The extremities were negative. The patellar reflexes were active.

The laboratory examination revealed a hemoglobin of 97%, a red count of 4,760,000. The white count was 13,300, with a differential count revealing polymorphonuclears 67%, lymphocytes 26%, monocytes 2%, eosinophiles 5%. A urine examination was negative. The fasting blood sugar was reported as 94 mgm. per cent; the non-protein nitrogen 38 mgms. per cent, and the sedimentation rate was 68 mm. in 1 hour. A coccidiodin skin test was found to be 2 plus. The sputum examination was reported as follows:

Tubercle bacilli were not present. A sputum culture revealed staphylococcus, streptococcus, gram positive diplococcus, and diphtheroids.

The hospital course was as follows:

His preoperative preparation and postoperative treatment included the use of penicillin in a dosage of 240,000 units daily. The total amount of penicillin he received amounted to 4,300,000 units.

On February 11th (four months after he was first advised to have surgery), a right pneumonectomy was performed. He died on the 14th

postoperative day. His temperature during the postoperative period was either normal or subnormal, except for the following days. On the second and third postoperative days, it reached 100 degrees. On the seventh and eighth postoperative days, the temperature was recorded as 99.2 and 99.6 degrees respectively. On the twelfth postoperative day, it was 99.8 and his temperature was normal on the day of his death.

During the immediate postoperative period his progress was satisfactory. It was necessary, however, to give intranasal oxygen continuously because of dyspnea without oxygen. On the sixth postoperative day, a superficial wound infection was discovered. The culture revealed hemolytic *staphylococcus*. The leukocyte count on this date was 19,750, with 80% polymorphonuclears, 13% lymphocytes, 4% monocytes, and 3% eosinophiles. On the ninth postoperative day, he had a severe coughing attack and immediately thereafter was extremely dyspneic. A needle was inserted into the right pleural space, and a positive pressure (+2, +10) was recorded on the pneumometer. Removal of 500 cc. of air resulted in immediate relief of the dyspnea. A few hours later 475 cc. of a serosanguineous fluid was aspirated from the right pleural space. The next day (tenth postoperative day), 625 cc. of serosanguineous fluid was aspirated from the right pleural space. The pneumometer readings were 0:—10 before aspiration and —3:—10 after aspiration. The fluid was cultured and reported as showing no growth. Three days later (on the 13th postoperative day), he was allowed to sit up in bed and dangle his legs over the side. He was able to do without oxygen and was able to shave himself on this date. The superficial wound infection was no longer present, but his leukocytic count remained elevated at 18,800. On the 14th postoperative day, he had a second episode of extreme dyspnea. This was not initiated by coughing. A needle was inserted into the right pleural cavity, but removal of air and a small amount of fluid did not in any way relieve his difficulty. He died within a few minutes of the onset of the dyspnea.

#### SURGICAL SPECIMEN

Grossly, the tissue is a right lung which has been excised at the hilus. Involving the lower lobe is a mass which arises, apparently adjacent to the lower bronchus 4.5 cms. from its origin from the main stem bronchus. This growth involves two-thirds of the lower lobe and apparently is well defined from the surrounding lung tissue. It is firm in consistency and uniform throughout, but somewhat granular in appearance. In one area, there is degeneration with abscess formation. Microscopically, the tumor is composed of tall, columnar cells which in areas suggested pseudostratification. The cells

are only moderately atypical in appearance, have well defined large nuclei with prominent nucleoli. Mitotic figures are moderate in number. In the area of the dark pigment, the growth is somewhat more limited in extent and in areas is lining air cells. Near the edge of the tumor the cells extend into the alveoli of the lung and in areas form the only lining to these alveoli. Desquamated neoplastic cells are found in the air sacks. Many sections taken through the bronchi and bronchioles do not reveal the tumor origin in these structures.

#### DISCUSSION

It was thought that this tumor arose from the alveoli and could be classified as an adenocarcinoma of the lung. At autopsy, there was found a phlebo-thrombosis of both femoral vessels and apparently a recent localization of the formed thrombus. An embolus completely occluding the left pulmonary artery was found. There was an enlarged lymph node adjacent to the bronchus of the left lung approximately 1 cm. from its origin. The bronchus in this area was somewhat granular in appearance, but no occluding growth was found. The prostate was removed routinely and examined with no suspicion of there being any pathological alteration present. Microscopic showed, however, that there was an early adenocarcinoma of the prostate gland. This carcinoma was active, had mitotic figures, and showed evidence of infiltration of a considerable portion of the posterior part of the prostate. Slight involvement of the lateral lobes was found. In addition to this, there was found an epidermoid carcinoma arising from the mucosa of the left main stem bronchus. The origin of this neoplasm was definitely determined, as there was a section including both normal and neoplastic epithelial cells. There was invasion of the underlying tissue; likewise, invasion of the lymph nodes. The metastasis in the lymph node was identified as an identical tumor to that of the bronchogenic carcinoma of the left bronchus and had no resemblance to the neoplasm removed at surgery.

#### CLINICAL DISCUSSION

The death of this patient due to pulmonary embolism. Such an occurrence immediately calls for a review of the contributing factors to pulmonary embolism in the hopes that such an occurrence may be prevented in the future. This case is somewhat unusual in the fact that the



phlebothrombosis was of the silent type. There were no peripheral signs, such as pain in the extremities, or a positive Homan's sign that might have led to an early diagnosis of phlebothrombosis. Had the foregoing signs of phlebothrombosis been present, a therapeutic bilateral femoral ligation would have been performed. In view of his age (51), there are those who would recommend that this patient have a pre-operative prophylactic femoral vein ligation. In retrospect, this procedure would have undoubtedly prevented the immediate fatal outcome. Another contributing factor in the phlebothrombosis and eventual pulmonary embolism is the failure to mobilize the patient. It is recognized that early ambulation is of benefit in preventing postoperative thrombosis and embolus. In a dyspneic patient, however, the amount of mobilization he can stand is very little, if any. In this particular case it was a practical impossibility. It is probably not of great consequence, but two other contributing factors may enter into the picture—the fact that the patient had a hypothermia during the postoperative period, and the fact that he had a large dose of penicillin (4,320,000 units). The hypothermia certainly indicates an inability of the patient to respond in a normal manner to trauma and should make one suspect a sluggish circulation that would contribute to thrombosis and embolus. As far as penicillin is concerned, there have been a few mentions made in the literature that penicillin

produces hypercoagulability of the blood. This seems highly questionable in view of the work of Dr. F. H. L. Taylor of the Thorndyke Laboratory. In carefully controlled work, he was able to show that penicillin had no effect on the blood coagulation. However, until additional specific work has been reported, this question remains uppermost in some individuals' minds. If penicillin does produce a hypercoagulability of the blood, then its use in the postoperative period is of course contraindicated. A combination of penicillin preoperatively and the sulfa drugs postoperatively might work out satisfactorily if one desired such therapy throughout both the preoperative and postoperative periods.

### CONCLUSIONS

1. A case of multiple primary carcinoma is reported. The tumors arose from the terminal alveoli in the right lung, the main stem bronchus of the left lung, and in the prostate gland.

2. All three tumors were active and apparently would have resulted in death of the patient within a relatively short period of time.

A short review is made of the contributing factors to pulmonary embolism in the hopes that such occurrences may be prevented in the future.

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## NITROUS OXIDE ANESTHESIA WITH CURARE FOR PULMONARY RESECTION

AUDREY URRY, M. D.

Phoenix, Arizona

A discussion of the use of nitrous oxide anesthesia with curare in pulmonary resections must necessarily revolve about the use of nitrous oxide itself.

Until about two years ago cyclopropane anesthesia with or without controlled respiration has been almost universally used as the anesthetic agent of choice in open chest surgery. When the use of cyclopropane was contraindicated in patients with arrhythmias or asthma, the alternate agent used was ether and oxygen or ether nitrous oxide oxygen.

Nitrous oxide anesthesia has been used for

thoracoplasties in well known medical centers for several years<sup>1</sup> but it was not used in chest cases where the pleura was to be opened until after its advantages had been pointed out in long abdominal operations<sup>2</sup>. In medical centers where residents were doing their first gastric resections and abdominal perineal resections, surgery which took these beginners several hours was not done without undue anesthetic trauma to the patients. Anesthesiologists who were continually on the lookout for minimizing this trauma were never able to use nitrous oxide for this purpose until the advent of curare. Suffi-

cient relaxation could not be obtained with nitrous oxide with concentrations which allowed the patient a normal amount of oxygen until curare came into use.

Nitrous oxide anesthesia with curare to produce profound relaxation is meeting the approval of most surgeons and anesthesiologists who are concerned with its use. The surgeons are pleased at the excellent relaxation and still more at the good condition in which the patients remain after long surgery. There is less fall in blood pressure, fewer rises in pulse rate, and fewer complications in the post-operative period.

With this experience proving satisfactory it was then used in identical fashion for open chest work. Curare in chest work is not for relaxation which is unnecessary there, but for better control of lung movements to facilitate the surgeon's work and for better ventilation of the patient.

The patient is heavily premedicated with a short-acting barbiturate, morphine and scopolamine. Nitrous oxide is a very weak anesthetic agent. The medication must be strong enough to reduce reflex irritability. The purpose is to produce light surgical anesthesia with a concentration of nitrous oxide and oxygen which will assure the patient of a concentration of oxygen over 21%. When the premedication is adequate this state will be reached in about five minutes of anesthesia. The patient is then tested to be sure that it is possible to inflate his lungs by pressure on the breathing bag. If this can be accomplished then enough curare is given to render him relaxed enough to intubate him under direct vision. The amount of curare will usually be from 120 to 200 units depending upon the muscular status of the patient. This dose will also render him apneic or nearly so. He is then intubated, the tube connected to the machine and his respirations are carried on by rhythmic manual pressure on the breathing bag sufficient to produce adequate ventilation of his lungs.

An anesthetic death is almost impossible with nitrous oxide oxygen as long as that patient receives a normal amount of oxygen. Nitrous oxide has no toxic effects in the body. The toxic effects reported from its use are those due to anoxia or hypoxia when the concentration of oxygen received by the patient was below that of room air or 21%. The fact that this concentration of oxygen and nitrous oxide is flowing from the gas machine is of no consequence if the patient's respirations are inadequate to ventilate

his lungs or if the circulation is inadequate to carry the oxygen to the tissues. These conditions as well as proper elimination of carbon dioxide must be fulfilled during any anesthetic with any anesthetic agent.

Morphine is chosen to reduce reflex irritability in preference to sodium pentothal for two reasons. Rovenstine's work on dogs shows a better tolerance to hemorrhagic shock when morphine was used as an anesthetic than when cyclopropane, ether, or pentothal were used. The tolerance was in the order named. Since all signs of anesthesia are muscular they are masked by curare paralysis. One must be sure that the patient is anesthetized and not just paralyzed. Therefore anesthesia must be carried on with the concentration of nitrous oxide and oxygen found to produce first plane surgical anesthesia without hypoxia before the curare was given. For this reason pentothal combined with curare is likely to be unsatisfactory since there is no indication of the depth of anesthesia when the muscles are paralyzed<sup>2</sup>.

The remarkable thing about the use of curare in large doses is the absence of any important systemic effects.

(a) It has been effectively demonstrated in man<sup>3</sup> that curare has no analgesic or hypnotic properties. Two and a half times the dose required to induce apnea in absence of anesthesia produces no change in consciousness or sensorium.

(b) Curare produces paralysis in all voluntary muscles where acetylcholine is the chemical mediator. Though acetylcholine is still produced it is ineffective in acting upon the receptor substance, thus blocking nerve impulses. The paralysis begins with muscles innervated by cranial nerves, then cervical nerves, intercostals and finally the diaphragm.

(c) There may be a transient fall in blood pressure but its duration is no longer than five minutes<sup>4</sup>.

(d) No significant change can be shown in the E. K. G.<sup>4</sup>

(e) No change in kidney function occurs<sup>4</sup>.

(f) There is a slight decrease in liver function, the significance of which is questionable because of the long surgery involved<sup>4</sup>.

(g) An average rise of 13 mg. per cent in blood sugar was recorded<sup>4</sup>.

(h) It produces an atony of the intestine which is overcome by morphine.<sup>5</sup>

In the case under discussion tonight a total dose of 740 units of curare (intocostrin) were used or an average of 90 units per hour. This is well above the average of 70 units per hour in my series of cases. The last dose of curare was given 2½ hours before the end of the anesthetic. Prostigmin, .37 mgs. were used to counteract the remaining effects of the curare. When the patient left the operating room he was ventilating his lungs vigorously with both diaphragm and intercostal muscles. It might be emphasized at this point that no patient should be allowed to leave the operating room and supervision of the anesthetist until the patient is not only using his diaphragm but has strongly contracting intercostal muscles. This cannot be too strongly emphasized for if this precaution is not carried out whenever curare is used in either chest or abdominal work, there is danger of an atelectasis developing within a short time. By the time this patient returned to his room he was completely rational and watching with interest the arranging of his intravenous solutions and carried on a normal conversation.

### SUMMARY

The advantages of curare with nitrous oxide anesthesia over others for pulmonary resections are:

1. Its low toxicity resulting in less change in pulse and blood pressure, better post-operative condition and fewer post-operative complications.
2. Patients waken without excitement from the anesthetic very quickly and are rational within 10 minutes.
3. Because of the non explosive gases a cautery may be used.
4. Controlled or compensated respiration may be used with the same advantages of that technique as when used with cyclopropane.

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## DISSEMINATED COCCIDIOIDAL GRANULOMA (Case Report)

BERTRAM L. SNYDER, M. D.  
GEORGE K. ROGERS, M. D.

Phoenix, Arizona

Bertram L. Snyder, M. D.:

This 32-year-old white male was first seen at the Maricopa County Chest Clinic on February 20, 1946, with a history of a slight productive cough, frequent episodes of fever, muscular aching, and fatigue for about three months. The patient stated that he had had what he thought was the "flu" for several weeks in December, 1945. There were no other complaints when the patient was first seen.

The past history was essentially negative. The patient stated that he had had no unusual diseases prior to the onset of his present illness. He stated that he had had the usual childhood diseases without complications. There was no history of malaria, typhoid fever, pneumonia, rheumatism, tuberculosis or venereal disease. About six years ago the patient stated that he was struck on the back of the head by a ladder, but apparently suffered no ill effects. He was born in Missouri, and several years later went to Iowa to live. While in Iowa he worked several years in a packing house and was a hide inspector. On coming to Arizona three years

ago, he went to work for one of the packing companies and worked for about 18 months, during which time his work consisted of grinding feed.

Family history indicated that his father died at the age of 74 with a "stroke." Mother died at the age of 54 with asthma. One half brother died with diphtheria, and one half brother died of "poison ivy." The patient has two sisters, living and well. Marital history reveals the patient's wife has pulmonary tuberculosis, far advanced, active. He has two children, living and in good health.

Physical examination revealed a well nourished, well developed, white male of 32 years. Temperature was normal. The pulse was 80 and the respirations were 20. The patient was 71 inches tall and weighed 154 pounds. He stated this was a loss in weight from 165 pounds, one month prior to his visit to the clinic. The remainder of the examination was limited to the chest, which revealed some increase in breath sounds at the right apex, but no rales could be elicited.

The x-ray of the chest revealed an infiltrative type of lesion in the right upper lobe, involving the vertebral and first interspace trunk areas. There was also noted a definite enlargement of the hilar lymph nodes. The diagnosis considered was pulmonary tuberculosis, Boeck's sarcoid or some type of fungus infection.

The patient was again seen on June 11, 1946 in the clinic, at which time an x-ray of the chest showed a rather remarkable clearing of the infiltrate, which had been previously noted in the right upper lobe. At this time it was noted that the patient had some rather peculiar skin lesions, located on the right upper anterior chest, above one eye lid, and under both nares.

The patient was referred to Dr. George Rogers for examination and biopsy taken revealed Coccidioidomycosis of the skin. For a period of several months the lesions were treated with some improvement noted, however, during the succeeding months the lesions grew progressively worse. Periodic x-rays of the chest failed to reveal much change. The hilar adenopathy still persisted.

**Hospital Admissions:** The patient was admitted to St. Joseph's Hospital, September 6, 1946, with a complaint of severe occipital headache of several days' duration. Examination of the record, at that time, was essentially negative. The temperature ranged between 100-102 degrees. Blood pressure was 122/78. General physical examination showed very little change. The fundi apparently were not examined and no spinal puncture was done. The urine was negative. Blood count essentially normal. The course in the hospital was not remarkable. The headaches soon disappeared and the patient was dismissed on the 11th hospital day.

The patient was readmitted to St. Joseph's Hospital on February 24, 1947, with a complaint of occipital headaches of increasing severity, fainting spells, and slight stiffness of the neck, and frequent episodes of double vision. Examination at that time revealed essentially the same skin lesions under both nares, over the left eye brow, upper chest region, and the right index finger. Examination of the eyes revealed bilateral choked discs. There was also slight impairment of hearing on the left side. A moderate lymphadenopathy in the left cervical region, and a slight stiffness of the neck.

Examination of the spinal fluid showed an increased pressure, with 440 mm. of water. The cell count was 222 white cells per cc. and these showed lymphocytes 90% and polymorphonuclears 10%. The Pandy was increased. The sugar showed 20 mg. per 100 cc. The chloride showed 554 mg. per 100 cc. Total protein 400 mg. The Wasserman was negative. Culture of the spinal fluid was negative. The urine was negative and the blood examination was essentially the same as the previous admission, except for a slight rise in the white count to

12,000. Fasting blood sugar was 142 mg. per 100 cc.

On March 4, 1947, another spinal fluid examination was done, showing increased pressure. A cell count of 364 white blood cells predominately lymphocytes. The smear was negative for acid-fast bacilli and fungus. Tuberculin test OT 1-1000 was negative, and positive 1-1000 dilution. Coccidioidin test was negative on two occasions. Sputum tests were persistently negative for acid-fast bacilli, and on numerous occasions examination was done for fungus growth, negative on smear and culture. Sedimentation rate was 17 mm. in 60 minutes by the Cutler method. Serological tests for Coccidioidal infection on October 4, 1946, showed an absence of complement fixation and a repeated examination on February 14, 1947, showed equivocal precipitins.

During the patient's last stay in the hospital the temperature did not rise above 99 degrees. The patient continued with periodic episodes of headache, dizziness, and on numerous occasions had nausea with projectile vomiting. He was often confused and irrational. On one occasion he fell in the bath room, striking his arm and head. He also complained of episodes of roaring in his ears.

He was finally transferred to Maricopa County Hospital on March 12, 1947. His course continued downhill and the patient expired on March 26, 1947, approximately 13 months from the onset of his illness.

#### DERMATOLOGICAL DISCUSSION

George K. Rogers, M. D.:

In the past few years articles on the deeper mycoses have become more numerous and this is undoubtedly due to a growing recognition of these diseases.

Coccidioidomycosis is essentially a systemic disease with cutaneous manifestations occurring only in a minority of cases. Clinically the cutaneous lesions are not characteristic. They can be classified as:

1. Primary cutaneous lesions followed by generalization.
2. Primary pulmonary lesions and later generalization with cutaneous pathology.
3. A third classification includes primary pulmonary lesions and later generalization without cutaneous pathology.

The early primary cutaneous lesions are furunculoid in character and are usually to be found on the exposed areas such as the hands and arms, although they may occur anywhere on the body. They are painless indolent nodules, deep seated and pink or red in color. The lesions spread slowly but may remain localized for years



before dissemination by way of the lymph and blood stream takes place. Eventually they suppurate and exude a yellowish pus which contains *Coccidioides immitis*. The resultant ulcers may become papillomatous and resemble blastomycosis. Again numerous sinuses may develop from the nodules and resemble cutaneous tuberculosis. Healing leaves an atrophic pliable scar.

Secondary metastatic lesions consist: First of variously sized subcutaneous nodules containing a gray pus and second warty papillomatous masses, the center of which may ulcerate. In the supraclavicular regions scrofuloderma-like lesions secondary to lymph nodes involvement may be found. Occasionally erythema nodosum-like lesions may be observed on the shins.

#### *Differential diagnosis.*

##### 1. Tuberculosis.

In the pulmonary variety of coccidioidomycosis the diagnosis of tuberculosis has frequently been made. The cutaneous lesion may resemble scrofuloderma or tuberculosis cutis.

##### 2. Late cutaneous syphilis.

This is characterized by the absence of constitutional symptoms, the lesions are usually single and the blood Wasserman positive.

##### 3. Lesions of granuloma fungoides.

The lesions in this condition respond very rapidly to X-ray therapy and this is of diagnostic value.

##### 4. Blastomycosis.

Here we have lesions with sloping inflammatory borders and tiny abscesses. Guinea pig inoculation with *coccidioides immitis* die from systemic infection, while no evidence of infection is apparent after inoculation with blastomycetes.

The diagnosis rest on demonstrating the organism.

##### 1. Microscopically.

##### 2. Culturally.

##### 3. Animal inoculation.

4. Jacobson elaborated a filtrate from *coccidioides immitis* cultures which is called Coccidioidin and intracutaneous injections of the filtrate is followed in eight to thirty-six hours by a positive cutaneous reaction which is of diagnostic help. This is a specific skin test similar to the tuberculin or the trichophyton test.

#### DERMATOLOGICAL EXAMINATION

This case was referred to dermatology because of numerous lesions on the face, chest and legs. These lesions measured approximately one centi-

meter in diameter and were elevated  $\frac{1}{4}$  to  $\frac{1}{2}$  a centimeter above the surrounding skin. They were grayish-pink in color, verrucous in appearance with a central depression, some of which were covered with a crust. These warty-like growths were discrete, painless and were firm to the touch with slight infiltration about the base. A peculiar feature in the case of a large lesion on the chest was that on performing a biopsy only a small section of this tumor was removed and a few weeks later this entire lesion healed without therapy, leaving a pliable scar. Several other lesions on the eye-brows and nose responded to superficial X-ray therapy while similar lesions elsewhere showed no response to the same dosage.

#### PATHOLOGICAL REPORT

A surgically removed granulomatous lesion from the skin was submitted for histological examination.

The specimen consisted of a papillary type of skin growth elevated well about the surface of the surrounding epidermis. The lesion measured 5 mms. in diameter. It was fairly well delineated from the surrounding skin. Section through the mass indicated a granulomatous type of lesion which was undergoing considerable necrosis.

The microscopic study was typical of a granuloma. There was pseudo-epitheliomatous extension into the dermis. Within the dermis and the upper layers of the dermis was a granuloma composed of numerous, widely scattered giant cells with surrounding inflammatory cells, predominantly plasma cells and lymphocytes. However, in a few areas, there were intraepidermal abscess formation as well as small abscesses in the dermis. Both within the giant cells and in the inflammatory tissue were found numerous spherules of *coccidioides immitis* with a double contour, hyalin outer layer, and a homogeneous inner layer with occasional spherule containing numerous, small endospores. No budding was found. The spherules varied markedly in size, some being rather small, while others being large. The larger spherules contained the endospores. The diagnosis was coccidioidal granuloma of the skin.

At autopsy, there was found grossly a disseminated granulomatous reaction which involved the lungs, mediastinal lymph nodes, adrenals, and epididymis. There was also found a meningitis which was predominantly basilar in type.

Microscopically, the lesions were similar in



practically all areas. In the lymph nodes, however, more pronounced epithelioid reaction, as well as fibrosis, was noticeable. The lesions in the lungs were small, miliary in type, had very little necrosis, and considerable epithelioid reaction with numerous giant cells containing coccidioides immitis.

Microscopically, as well as grossly, the following organs were involved: The lungs, spleen and lymph nodes, kidneys, epididymis, meninges, adrenal glands, mucosa of the nose and the skin. No lesions were found in the liver. The lesions in the cerebrospinal system were limited to the meninges. In this area was a typical type of epithelioid reaction with very little caseous necrosis or necrosis of any type associated with epithelioid cells and numerous giant cells. The spherules were, on the average, considerably larger than those found elsewhere and were more actively proliferating, as many contained numerous spores, and in areas rupturing of the spherules with release of the endospores was found microscopically.

The anatomical diagnosis was disseminated, progressive, coccidioidal granuloma, with coccidioidal meningitis; granulomatous lymphadenitis of the mediastinum, and involvement of the kidneys, adrenals, spleen, and skin.

#### GENERAL DISCUSSION

Ben F. Frissell, M. D.:

Dr. Snyder has presented an interesting case—a classical example of the progressive or disseminated form of coccidioidomycosis. Fortunately this phase or type of the disease is extremely rare (being reported as occurring in .2% of all cases) for it is an extremely fatal form of coccidioidomycosis with various reports indicating a mortality rate of 50+%. The so-called primary, or pulmonary, type of coccidioidomycosis, although it carries a much lower mortality rate, is of much more clinical interest because of its prevalence in our region of the country.

Human infection by the fungus *Coccidioides immitis* was first described in Argentina by Werneke in 1892. The disease was not given much publicity in this country until 1935 when Gifford and Dickson described the so-called San Joaquin Valley Fever, which has more recently been shortened to "Valley Fever," and could perhaps be very aptly termed "Salt River Valley Fever."

We are indebted to the Army Medical Corps for extensive clinical observation and research in this disease during the past few years. These studies have brought out several interesting facts. There is an extremely high incidence of positive skin test to coccidioidin among the natives and older residents in this area. For instance, in the school children in Phoenix 50% or more of high school students showed positive reactions. This finding is interpreted as indicating past infection or development of immunity through contact with the fungus. The susceptibility of newcomers into the southwest, and particularly Negroes and Mexicans as compared to native population is quite striking. Among one-year residents, the incidence of positive skin test was less than 20%, whereas among adults residing in the area for ten or more years the incidence of positive coccidioidin test was 70-80%. The highest incidence of the disease occurs during the spring and late summer months of the year at times when the wind velocity is highest and the occurrence of dust storms in the desert areas is quite common.

The clinical picture of the disease at the onset closely resembles influenza, with which it is frequently confused. In the majority of cases there is pleural type chest pain, cough—usually non-productive, but on some occasions showing small amounts of characteristic yellowish, purulent sputum. Physical signs in the chest are frequently not evidenced although on x-ray examination there are usually found hilar and parenchymal lesions, easily confused with atypical pneumonia and in some instances, particularly in cases of longer duration, tuberculosis. In fact, it is not amiss to state that many cases of so-called tuberculosis in this part of the country have in fact been undiagnosed cases of coccidioidomycosis. The clinical course of the usual case of coccidioidomycosis runs from two to six weeks and in the disseminated form months or even years. Diagnosis can be made in the vast majority of cases. Of course, as in any other disease not too well known, consideration of the disease in question is of vast importance. The clinical course is much too long for influenza without complications. X-ray findings in the early stage of the disease are likewise helpful in differentiating influenza. Blood count in coccidioidomycosis usually shows a leukocytosis, frequently with eosinophilia and the sedimentation rate runs quite high. The skin test

does not become positive until after the second or third week of the illness. In this respect a skin test done early in the disease and found to be negative at that time, later repeated and found to be positive can be considered as significant from a diagnostic standpoint. Otherwise the coccidioidin skin test must be interpreted in the same light as the tuberculin test. Sputum analyses are usually disappointing in that the fungus can rarely be demonstrated by cultural or direct methods.

Of considerable importance in diagnosing and prognosticating the clinical course of the disease, are serological tests which have been developed in the laboratory of Dr. Charles E. Smith of the Department of Public Health, Stanford University these tests utilizing the complement fixation and precipitan test techniques. Up to the present time, however, these tests are only being done in Dr. Smith's laboratory and our distance from these facilities is no little handicap in utilizing this particular diagnostic aid.

Skin lesions described in coccidioidomycosis are of considerable assistance when they occur, but despite the impressions gained from the earlier literature on the subject the lesions are only found in 3-15% of cases. Characteristic skin lesions are so-called erythema nodosum type occurring particularly on the lower extremities

but sometimes on the upper extremities as well.

The disseminated form is, of course, more apt to develop in individuals showing the least acquired and natural immunity to the disease and a particularly high incidence of this type of infection is found in the colored race. This phase of the disease may last a few months or even a few years. Practically all organs of the body may be involved—lungs, meninges, skin, bones and joints are most frequently involved.

As far as has been determined there has been no occurrence of man-to-man infection in this disease, so that clinical isolation would not appear to be of any importance. Treatment otherwise is entirely supportive and symptomatic. All of the so-called specific drugs and chemotherapeutic agents have been tried and found to be uniformly ineffective in controlling this infection. The prime requisite of therapy would appear to be close clinical observation with complete bed rest for a sufficient period of time to allow the disease to run its course with the least possible danger of developing a disseminated phase of the disease. Sedimentation rate can be used clinically as a guide to the duration of bed rest. A rule established by the Army Medical Corps, which appears to be a good one, is that the patient be kept at bed rest until the sedimentation rate returns to normal.

## MEDIASTINAL EMPHYSEMA

### A Case Report

A. B. THOMPSON, M. D.

Tucson, Arizona

THE significance of this report is not the newness of the condition, as mediastinal emphysema has been recorded in the literature for many years. It is interesting, however, to review some of the present-day conceptions, as to the method or methods of the entry of air into the mediastinal space; the effect of air in the space; the possibility of confusing mediastinal emphysema with some more serious condition; or the failure to recognize early, and thus permitting the condition to reach serious proportions.

There are two recognized types, traumatic and spontaneous.

*Traumatic:* Crushing injuries to the chest may

cause emphysema of the mediastinum, by fracturing ribs, which puncture the lung, causing interstitial emphysema, and resultant mediastinal emphysema. The same process is followed in the performance of artificial pneumothorax, where the needle pierces the lung tissues, as occasionally occurs.

On the other hand, one may be sitting quietly, when suddenly struck by a pain in precordium, radiating to the left scapula, and occasionally down the left arm, accompanied by dyspnea and cyanosis. It develops that the patient has suffered a spontaneous mediastinal emphysema. MacKlin<sup>1</sup> has suggested that the basis for this may have been set by alveolar distension from previous straining, etc. This can

and often is confused with angina pectoris or even coronary occlusion.

The causative factor leading to mediastinal emphysema has been outlined by Hammon as:

1. Trauma
  - a. Injury to the chest with or without rib fracture.
  - b. Operation on the chest particularly the induction of pneumothorax.
2. Increase of Intrapulmonary pressure
  - a. Straining with the glottis closed
  - b. Heavy lifting
    - Straining at stool
    - Childbirth
    - Attempts to resuscitate the newborn
  - c. Occlusion, partial or complete of trachea or bronchi; usually accompanied by cough, anesthesia, particularly closed method of inflation method
    - Asthma
    - Bronchitis
    - Foreign bodies
    - Whooping cough
    - Pneumonia
3. Spontaneous rupture of Alveoli

There are other possible factors, which undoubtedly lead to mediastinal emphysema. Any condition which permits air to follow the fascial planes, particularly along the greater blood vessels, may cause emphysema, by dissecting the tissues into the mediastinum. Air, after once entering the mediastinum at times may escape from the mediastinum. The amount of intramediastinal pressure undoubtedly is a factor in the escape.

The paths followed in the escape are: Into pleural cavities; through the diaphragm, around the aorta and esophagus, to the retroperitoneal tissues; and into the pleural cavities.

Air in the neck gives suspicion of mediastinal emphysema. However, air does enter the subcutaneous tissues of the neck from the buccal and nasal cavities.

I doubt whether there is anyone who has given any number of pneumothorax inductions, who has not heard the complaint, at some time, immediately following an induction, when a patient has complained of pain in the abdomen, or pain on swallowing, demonstrating air leaving the mediastinum, by way of the diaphragm, along the aorta or esophagus, reaching the retroperitoneal tissues.

It is now fully agreed, as a result of extensive

investigation and study, that air can, and frequently does, enter the pleural cavity from the mediastinum, but that air never enters the mediastinum from the pleural cavity.

The clinical manifestations of mediastinal emphysema may be listed as pain, subcutaneous or retroperitoneal emphysema, pneumothorax, obliteration of cardiac dullness, evidence of increased intramediastinal pressure, as engorgement of the veins, cyanosis, dyspnea, and, depending on the degree, the bulging of the eyes, and a peculiar sound, usually heard substernally or at the apex of the heart, which has a distinctive, bubbling, crunching sound.

Substernal pain, radiating to the left shoulder, and down the left arm, accompanied by cyanosis, and dyspnea can be confused with angina pectoris. This is particularly true, if the condition is spontaneous mediastinal emphysema.

Subcutaneous emphysema at the base of the jugulum may be the only evidence of the presence of mediastinal emphysema. In the absence of other causes, it may be considered as *prima facie* evidence of the existence of mediastinal emphysema.

Tension pneumothorax has been considered as a valve-like rent into the pleura, where air may enter, but not escape. There is no pathologic or post mortem evidence of the existence of this fact.

The studies of Hammon and Stephens conclude that there is a pre-existing interstitial emphysema. This view is fortified by the development of contra-lateral pneumothorax in operation on the thorax.

If there is sufficient air in the mediastinum the cardiac dullness is obliterated. However, the amount of air may be so small as not to be recognizable, and thus cause no percussion variations.

Increased mediastinal pressure causes pressure on the contents of the mediastinum. Thus, depending on the amount of pressure, is evidence of engorgement of the cervical veins, collapse of the circulation, cyanosis, altered breathing, and even resultant death.

There is a distinctive sound heard usually at the mitral area which is synchronous with the heart-beat. It has a crunching, bubbling sound. It is always systolic. It may be to and fro. This is confused with pericarditis or pneumo pericarditis. Its presence is pathognomonic evidence of mediastinal emphysema.

The above findings with normal white cell count, no elevation in temperature, are distinctive in the usual case of mediastinal emphysema.

The case presented here carries out some of the features discussed above.

A wiry 15-year-old boy who was engaged as a water-carrier in making adobes. This required the lifting of a heavy pail of water, and carrying it some distance, so that the adobe-maker could mix his adobe dough. Chief complaint was substernal pain, aggravated by deep breathing, beneath the lower sternum.

Onset was acute. Pain is unaccompanied by cough, hemoptysis or fever. No prior history of rheumatic fever, joint pains or heart disease. Negative history for Tuberculosis.

History by system essentially negative. No weight loss or generalized weakness.

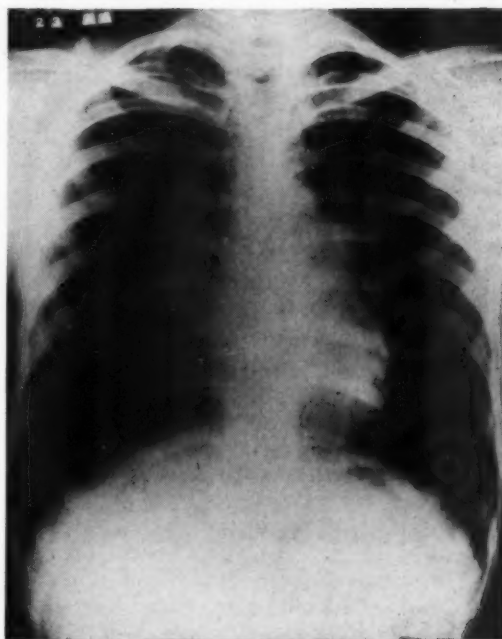
Family history non-contributory.

General condition: Pulse 70; Character, regular, good volume, and fair tension. Nutrition fair; Temperature 98.6; anxious facies, not cyanotic.

Conjunctiva show good color, pupils equal and regular. No nuchal rigidity. Lung fields clear to P & A.

There is a leathery, crunching to and fro sound, synchronous with the heart sounds. This sound is heard best near the lower left border of the sternum.

Urinalysis: Specific Gravity 1.030; Albumin



X-ray of chest on August 24, 1947

and Sugar, negative. An occasional erythrocyte was found.

The blood picture was: Red Blood Cells 3,790,000; White Blood Cells 6,800; Hemoglobin 12 gms.; Neutrophils: Stabs 8%; Segmented 12%; Lymphocytes 78% Monocytes 2%. Blood Kahn negative; Blood Wassermann negative.

X-ray of chest on admission, August 18, 1946: Left mediastinal emphysema with consequent distortion of the left hilar structures.

X-ray two days later, August 20, 1946: There is some lessening of the amount of left mediastinal emphysema. The lateral view shows a small amount of free air between the pleura and sternum at, about the level of the manubrium down to the diaphragm, as well as some streaking along the upper mediastinum which is probably due also to the emphysema. The chest has a narrow AP dimension.

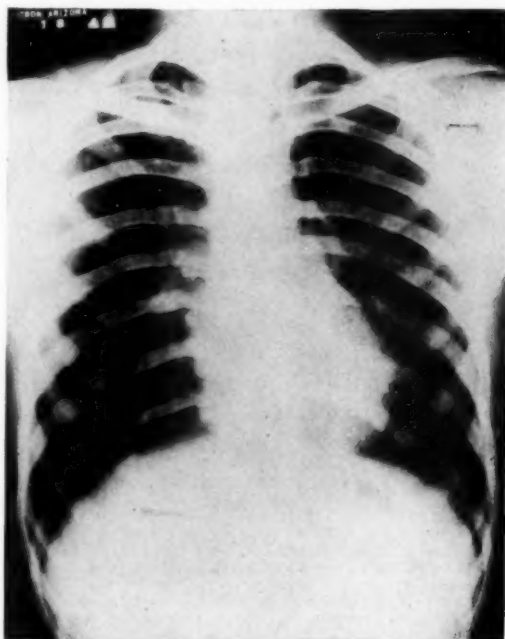
Electrocardiograph, August 22, 1947:

1. Tendency to right axis shift
2. Sinus arrhythmia
3. Within normal limits

X-ray of chest on August 24, 1947: The left mediastinal emphysema has diminished so that now there is only a very small amount of air adjacent to the larger vessels of the heart.

#### CONCLUSION

Here is presented a case which was spontaneous in its onset. The suggestion of MacKlin was undoubtedly manifested here, in that no doubt the alveoli were distended from the straining in



X-ray of chest on August 18, 1946



lugging the heavy pails of water and the acts of deglutition in eating his lunch, and drinking the water, probably closed the glottis just sufficiently to increase intra alveoli pressure, or rent through into the mediastinum, or cause the air to pass along the fascial planes, causing the acute pain.

The summary here of facts collected:

1. Conception of mediastinal emphysema originated primarily as increased intra alveolar pressure, resulting in the rupture of the alveolar wall, resulting in interstitial emphysema, and rupture of parietal pleura, resulting in mediastinal emphysema (Hammon).

2. Tension pneumothorax now considered mediastinal emphysema, rupturing into the pleura, causing pneumothorax (Hammon).

3. Spontaneous mediastinal emphysema can have distended alveoli, and/or interstitial emphysema which by and closure of epiglottis, producing increased intra alveolar pressure, may be sufficient to rupture the parietal pleura and produce mediastinal emphysema.

4. Symptoms of shock, accompanied by pain located in substernal, precordial, subscapular, and radiating to left arm, or in back, should consider in the differentiation mediastinal emphysema.

The to and fro crunching sound, which is diagnostic, should always be kept in mind, as there is the possibility of confusing this with the rub of pericarditis. This is accentuated, when, as in this case, the loud, distinctive sound was heard on withholding the breathing.

### CONCLUSION

Here has been presented a case, bearing out some of the present day conceptions as to the origin and features of mediastinal emphysema. X-rays have been presented to show the ready absorption of air in a not too serious case. The discussion brings to mind once again the old warning, "Bear in mind the possibility of mediastinal emphysema when certain syndrome of symptoms presents itself."

### Röntgenologic and Fluoroscopic Findings

Dr. Edward M. Hayden.

8-18-46—

*Chest Pa:* There is flattening of the left hilar structures in the tortuous curve adjacent to the midline, and there is a long fine line of pleural density lateral to the heart and aortic shadows which extends from the head of the clavicle down to the diaphragm. The lungs are clear except for a few minute scattered nodulations. The heart is within normal limits.

*Conclusion:* The above findings suggest the presence of left mediastinal emphysema with consequent distortion of the left hilar structures. Recheck in a few days in the PA and left lateral position is recommended.

E. K. G.:

8-21-46—

*Rate:* 60

*Rhythm:* Irregular and of sinus origin.

*P-Waves:* P is upright in the limb leads, isoelectric to upright is Lead VI. P<sub>4</sub> and P<sub>5</sub> are inverted. PR is within normal limits.

*QRS Complexes:* QRS<sub>1</sub> is equiphasic with an S-wave. QRS<sub>2</sub> diphasic with a small S-Wave. QRS<sub>3</sub> is upright with the semblance of an S-wave. In the precordial leads, QRS is normally diphasic. RT shows no deviations from the normal.

*T-waves:* T-waves are upright and of normal contour throughout.

### Impression:

1. Tendency to right axis shift.
2. Sinus arrhythmia.
3. Within normal limits.

8-23-46—

*Chest PA:* Since 8-20-46 the left mediastinal emphysema has diminished so that now there is only a very small amount of air adjacent to the larger vessels of the heart.

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## CARCINOMA OF THE RECTUM AND RECTOSIGMOID\*

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CARCINOMAS of the rectum and rectosigmoid often present more perplexing problems than cancer occurring elsewhere in the large intestine, for the reason that adequate removal of a malignant process in one of the distal segments often necessitates the establishment of an artificial anus or colonic stoma. It truly is amazing to both patient and surgeon how often patients who have colonic stomas are able to "carry on" in an almost normal manner. Obviously, if the continuity of the bowel can be maintained following radical surgical removal of rectal or rectosigmoidal cancer, the patient is indeed happier but, unfortunately, this cannot be done in all such cases.

## RECTAL CARCINOMA

Some localized carcinomas of the rectum proper, in which the neoplastic disease does not involve more than the mucosa and submucosa, may be adequately treated by excision without prolonged interference with functional activity. In some instances it is necessary to divide the anal sphincter muscles completely in order to obtain satisfactory surgical exposure. It must be emphasized again and again that such local excision of malignant growths of the rectum can be carried out safely in only a small percentage of cases because most rectal carcinomas when first recognized are of size and extent that preclude local excision as an adequate operation. One may say, therefore, that by far the majority of rectal cancers require some type of radical surgical procedure.

Hochenegg in 1888 suggested and carried out the "pull through" operation for rectal cancer. In this procedure he freed the pelvic colon by means of an abdominal approach, then by a perineal approach he excised the diseased segment of rectum or the entire rectum and then pulled the healthy distal end of the sigmoid colon through the anal sphincter muscles. This appeared to be the answer to the problem of rectal cancer. There are, however, to my notion, two possible reasons why this procedure may meet with disapproval. First, the nerve supply of the internal sphincter may be severely interfered

with, thus eliminating the involuntary control of the bowel. Second, such a procedure does not permit of radical excision of the perirectal tissue, which often is shown to be the site of secondary spread of the disease. Hochenegg's procedure, now employed by Babcock, Bacon and others, is apparently being rejuvenated. From my experience the "pull through" or Hochenegg operation for rectal cancer, like the local excision previously mentioned, has limited use; namely, only in small localized lesions.

More radical surgical removal of rectal carcinoma is brought about by the Miles combined abdominoperineal operation with a permanent single-barrel abdominal colonic stoma or by the so-called Kraske or Lockhart-Mummery operation in which a permanent loop type or double-barrel abdominal colonic stoma is established and is followed by a perineal resection of the rectum. The latter usually is performed as a secondary procedure after the lapse of ten to fourteen days.

The merits of these two procedures have been widely discussed and excellent results have been reported from both operations. My experience with these radical procedures for rectal cancer leads me, at present, to the following conclusions.

The combined abdominoperineal operation carried out in a single stage may fail to meet some of the requirements for which the procedure was designed. In the first place, most of the surgeons employing it emphasize the importance of radical excision in the abdominal portion of the operation and then during the perineal or final stage of the intervention they fail to carry out a radical excision of the perirectal tissues, which often are the site of direct extension or nodal spread of the disease. In the original essay on the procedure Miles stated that lateral spread of rectal cancer rarely if ever occurred. This view, as many of you know, has not been substantiated. True it is that the combined abdominoperineal procedure often effects permanent relief of rectal cancer. However, some patients for whom "cure" is expected return because of recurrence of the disease in the perineum. Such recurrences, at least in part, according to my observation and opinion, are due

\*Read before Lois Grunow Memorial Clinic, Phoenix, Arizona, February 22, 1947.

to malignant tissue or involved nodes which could have been removed in some instances had a more radical perineal dissection been carried out, for example, by wide excision of the perirectal fat, fascia propria and levator ani muscles.

It is important, I believe, to keep in mind that such radical, and I think necessarily radical, perineal operations are associated with considerable shock; therefore it is at present my custom to perform the Miles (combined abdominoperineal) operation in two stages. At the initial procedure the abdominal cavity is approached by means of a low rectus incision. The colon is divided between two Payr clamps at a site near the level of the sacral promontory. The sigmoidal mesentery, including the superior hemorrhoidal vessels, is divided and ligated. The posterior parietal peritoneum is incised only at the base of the mesentery where the superior hemorrhoidal vessels are clamped, divided and ligated. The left ureter also is identified and isolated. Next the proximal end of the distal sigmoid is inverted and the segment of bowel is dropped free into the pelvis. The small defect in the posterior parietal peritoneum is repaired by means of two or three interrupted catgut sutures. Finally, the distal end of the descending colon is brought through the primary incision or through a small muscle-splitting incision in the left iliac region, establishing a single-barrel stoma. In performing the colostomy the anterior peritoneum never is sutured to the bowel, which is held in place by means of a Payr clamp. The day following operation, the colon is opened by means of a cautery immediately beneath the clamp. The clamp automatically becomes detached on the fifth or sixth postoperative day. After a period of ten to fourteen days the colonic stoma is functioning satisfactorily. Such patients are out of bed on or about the fifth postoperative day.

The second and final or perineal operation is carried out with the patient under low spinal or sacral anesthesia produced by 100 to 120 mg. of procaine hydrochloride. The patient is placed in a reverse Trendelenburg position and the distal segment of bowel, which includes the rectum and sigmoid colon, is removed. An ounce (30 c.c.) of merthiolate is instilled through the anus. Swabbing of the anorectal tissues must not be done, since this maneuver might force some of the malignant cells from the rectal growth into the lymphatic or circulatory system. Further-

more certain types of bacteria which occur in the lesions secondarily may be dislodged into the same channels, producing such serious or fatal infectious processes as bacterioides, a complication that I have emphasized in previous publications. Next the anus is closed by means of a purse-string type of suture. Then with the cautery an incision is made beginning at the level of the base of the coccyx and extending about 3 inches (8 cm.) lateral to the anus downward to a midpoint in the perineum. Following this a similar incision is made on the opposite side. The coccyx is then disarticulated and removed and the fascia propria is incised in the coccygeal region. Now the perirectal fat, fascia and levator ani muscles are widely removed from both sides of the bowel. The rectum is next freed by cautery dissection from the prostate gland or posterior vaginal wall. In the male, caution must be taken during excision to avoid injury of the membranous urethra. After this the upper rectum is freed from the hollow of the sacrum by passing the left hand cephalad between the bowel and the sacrum until the inverted end of the sigmoid is reached. It is then grasped and drawn downward into the perineal wound, the lateral ligaments or rectal stalks are divided and the entire distal segment is removed. Five grams (75 grains) of microcrystalline sulfathiazole are placed in the peritoneal cavity. The perineum is closed transversely and the perineal wound is packed by means of first, a large square of synthetic silk, and secondly a 4 inch (10 cm.) gauze pack varying in length from 4 to 6 feet (122 to 183 cm.). The cutaneous edges are approximated about the pack with catgut sutures. The pack is removed on the third postoperative day. On the fifth or sixth postoperative day, daily sitz baths are begun.

Following this type of perineal resection the patient is kept in the hospital ten to fourteen days. Complete healing occurs in six to twelve weeks. This procedure I have carried out in about seventy-five cases without a death. The sacrifice of the superior hemorrhoidal vessels has in no instance caused necrosis of the distal segment of bowel. However, some microscopic necrosis of the cancerous lesion does occur. I believe that this operation is radical in nature and I think that it has merit. Another possible advantage of this two-stage combined abdominoperineal procedure (combined with the one-stage operation) is that, according to my experience,

it gives rise to less "shock" in patients sixty-five years of age or older and therefore there is lower morbidity and mortality.

Finally, in considering surgical procedures of the removal of rectal cancer, a safe and quite radical operation and one which I have found carries low risk is the Kraske operation, so-called. This consists in an abdominal loop or double-barrel colostomy followed in ten days or two weeks by perineal or posterior resection of the rectum and rectosigmoid. In this operation, as is well known, the abdominal cavity is entered and explored by means of a low left rectus incision. A loop of distal descending colon or sigmoid is brought out and fixed in the midportion of the incision. Fixation is accomplished by passing a rubber-covered glass tube through the mesentery of the bowel. The abdominal wall then is closed about the small loop or knuckle of the exteriorized colon. One should exercise great caution in establishing this type of colostomy in order not to close the abdominal wall too tightly around the bowel. If this error is made, marked edema of the exteriorized bowel will ensue, causing a poorly functioning colonic stoma. Also, any slack or redundancy of the bowel proximal to the site of the colostomy will often permit the proximal segment of the bowel to prolapse, requiring amputation. The second and final stage of the operation is carried out as was previously discussed in describing the two-stage combined abdominoperineal operation, with one exception, and that is that in the Kraske type of operation with a loop colostomy, the peritoneum is opened during the rectal resection and the remaining distal end of the sigmoid is inverted and replaced in the peritoneal cavity and the posterior incision is packed as previously described.

#### *Carcinoma of the lower sigmoid or rectosigmoid*

In 1930 I became interested in the removal of carcinomatous lesions of the lower sigmoid by means of a procedure which would permit the re-establishment of continuity of the bowel. This idea occurred to me for the following reasons: I was impressed by the good results which had been obtained in the care of rectosigmoidal carcinoma by the Hartmann operation. This procedure is characterized by a one-stage resection in which the rectosigmoid or upper rectum is cut across a few centimeters distal to the growth. The upper rectum is then inverted and the re-

maining pelvic portion of the colon together with the growth is mobilized. Then the bowel is divided in the region of the distal descending colon. The proximal end of the latter is brought out as a single-barrel colostomy after removal of the intervening segment of bowel. Many of the patients who had undergone the Hartmann type of operation were found to be alive and well many years afterward and without evidence of return of the growth in the portion of the rectum which remained. In reviewing many specimens removed in this manner I was impressed by the fact that the site of amputation in the rectosigmoid or rectum was invariably in close proximity to the cancerous process. Could it be then that carcinoma in this region or segment of bowel rarely if ever spread downward? A careful study of the literature revealed to me that only in rare instances did carcinoma spread downward into the lymph nodes farther than 2 cm. and that when spread of such type did occur, the proximal lymphatics were blocked by the carcinomatous process. With this deduction then as a justifiable basis, I began carrying out the so-called low anterior resection with re-establishment of the continuity of the bowel. Lesions occurring from 6 cm. to 20 cm. from the anal margin may be suitably treated by the operation about to be described.

#### *Technic of low anterior resection for carcinoma of the lower sigmoid*

The abdominal cavity is opened by means of a long, low left rectus type of incision and an exploratory procedure is carried out. The patient is in deep Trendelenburg position. First the liver is palpated for distant metastasis. Next the colon, beginning with the cecum, is examined to rule out the possible coexistence of other malignant lesions. The low sigmoidal lesion is palpated. If resection is thought to be feasible, the procedure is begun by first incising the fused lateral peritoneum from near the splenic flexure of the colon down to the pelvic peritoneal fold. The left ureter is identified and isolated. Next, the posterior parietal peritoneum is opened mesially at a point immediately cephalad to the superior hemorrhoidal vessels. The mesial peritoneal incision is extended downward and along the base of the mesosigmoid and curved around the rectovesical or rectocervical neck. The entire pelvic colon, rectosigmoid and upper rectum are then mobilized by freeing the

mesosigmoid from the sacrum, beginning at the sacral promontory and extending to the tip of the coccyx, by means of sharp and blunt dissection. The rectal ampulla is next mobilized from the vagina or seminal vesicles and prostate. In rectosigmoidal cancer situated at the pelvic peritoneal fold it is necessary, in order to obtain satisfactory mobilization, to divide and ligate the lateral rectal stalks or ligaments, which contain the middle hemorrhoidal vessels. Complete mobilization of the entire pelvic portions of the colon and upper colon and upper rectum having been obtained, the superior hemorrhoidal vessels are next divided and ligated, as are the vessels in the mesentery of the distal portion of the descending colon. The latter is then divided between Payr clamps.

Long, especially constructed curved rubber-covered clamps are then placed across the bowel, usually across the upper portion of the rectum, or as far distal as possible from the lower margin of the growth. The bowel is now divided between the clamps and the pelvic colon containing the tumor is removed. The descending colon, already sufficiently mobilized, is brought down and anastomosed as an open end-to-end procedure. Chromic catgut is employed. Five grams (75 grains) of sulfathiazole are sprinkled into the hollow of the sacrum. A long Penrose cigaret drain is employed, one end being inserted into the sacral hollow near the tip of the coccyx and the other end being brought out through the lower end of the abdominal incision. This drain is lifted out — not pulled out — on the eighth or ninth postoperative day. The lateral and mesial layers of the posterior parietal peritoneum are sutured to the edges of the bowel, thus obviating any defect in the pelvis. The suture line of the anastomosis is kept intraperitoneally, if possible; however, in low sigmoidal lesions this sometimes is impossible. Thus, the resection and re-establishment of continuity of the bowel have been carried out.

Since such anastomoses are difficult it is my practice at present as in the past to establish a temporary loop type of transverse colostomy. This is accomplished by bringing a small segment of the transverse colon to the exterior in the upper end of the primary incision. This segment of bowel is held in place by means of a rubber-covered glass tube passed beneath the gut

through its mesentery. The abdomen is then closed about the loop of exteriorized colon. The latter is opened by means of cautery the day following resection. Such colonic stomas may be closed within three or four weeks following resection. Spur-crushing clamps are employed prior to closure of the stomas in about 75 per cent of the cases. An intraperitoneal type of closure always is employed.

During the years 1930 to 1945, inclusive, I carried out low anterior resection in slightly more than 500 cases. Of this number, 340 patients had no evidence, on abdominal exploratory operation, of distant metastasis even though there was nodal involvement adjacent to the primary lesion in many of the cases. It is my opinion that one should consider that resection in these 340 cases was employed with the hope and idea of "cure." The distance of the lesion from the anal margin (estimated during proctoscopic examination) ranged from 6 cm. to 20 cm. In ninety cases the lesions were from 6 cm. to 10 cm. from the dentate margin. In the remaining 250 cases the cancer in the rectosigmoid and sigmoid was at a distance varying from 11 cm. to 20 cm. from the anal margin.

The mortality rate per patient in the earlier operations varied from 9 to 13 per cent. It is of special interest, I think, to note that since the use of sulfonamide drugs the hospital mortality rate has dropped dramatically. For example, from 1941 to 1945, I carried out 184 conservative low anterior resections with two deaths. In one case, the cause of death was a type III pneumonia; in the other, death was due to coronary disease.

Some well-known and able surgeons doubt the value of sulfonamides. The work of Poth and Knopp, substantiated clinically by Benson and me, proves I believe beyond doubt, that the preoperative use of sulfasuxidine or sulfathaladine, plus the employment of sulfathiazole at the completion of each operation, has greatly diminished the incidence of infection, thus lowering morbidity and mortality. Preoperatively, sulfasuxidine or sulfathaladine is administered over a three-day period. A total of 720 grains (47 gm.) is given orally in divided doses at four-hour intervals. Also, a nonresidue diet, high in carbohydrate, is employed. Gentle catharsis is brought about by means of sodium phos-



phate administered during the first two days of preoperative management. Two to four drams (8 to 16 gm.) are given every four hours. Also, during this period (two days) the rectum is gently irrigated with saline solution twice daily. On the third and final preoperative day 2 fluid-drams (7 c.c.) of paregoric are given each three hours.

At the completion of resection and closure of the colonic stoma, 5 gm. (75 grains) of sulfathi-

azole are placed in the abdominal cavity near the site of the anastomosis.

The five-year survival rate in 272 cases in which I have carried out the two-stage low anterior type of resection for cancer of the low sigmoid with re-establishment of continuity of the bowel is 67.7 per cent, which I believe compares favorably with any type of procedure, including those operations which necessitate permanent colostomy.

## FALSE POSITIVE SEROLOGY; ITS INTERPRETATION AND MANAGEMENT

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AS Stokes<sup>1</sup> has stated, a positive blood test does not necessarily mean that a person has syphilis. During World War II, physicians and public health workers learned this to be a fact. A renewal of interest in false positive serologic reactions is indicated. Case histories are narrated to emphasize this clinical problem. Treatment must not be given on the basis of a single, unconfirmed positive blood test occurring in the routine examinations in the course of, or shortly after, a non-syphilitic disease, unless the patient has definite clinical syphilis. In this respect, a quantitative titrated test will in many instances give a hint that one is dealing with a false positive reaction, especially if the titer is low and that anti-luetic therapy need not be instituted before the diagnosis of syphilis is established. (This is not possible with a too prevalent serologic report of "positive." We do not regard any blood titer below four as worthy of anti-luetic therapy without other substantial evidence.

The main concern in the matter of false positive serologic reactions is not to discuss the causes but to encourage a more skeptical attitude towards the Kahn, Kline, Kolmer or whatever standard serologic test is used, instead of accept-

ing them at their apparent value. Davis<sup>2</sup> well said that "The practitioner should cultivate a sufficiently high index of suspicion towards serologic tests, and should implement this with sufficient patience."

There are various causes of false positive reactions. According to Lynch, Boynton, and Kimball,<sup>3</sup> there are three main groups of such reactions:

1. Those due to technical error, a relatively infrequent occurrence.

2. Those reactions encountered in persistently false positive human serums resulting from the presence of a reagent-like component, which has been demonstrated in various animal serums.

3. Those positive serologic reactions which are found in patients with organic diseases other than syphilis.

In our exhibits at the meetings of the Chicago Medical Society, The St. Louis Clinical Conference, the Mississippi Valley and American Railroad Surgeons, in 1946, we demonstrated by charts the frequency of false positive serologic reactions as it is found in various skin diseases. Pityriasis rosea, acute pemphigus, sarcoidosis, granuloma, fungoides, tubercloid, and herpes (especially progenitalis) should be called to the attention of the clinicians as they occasionally show a false positive reaction. In isolated cases, purpura, pellagra, and chaneroid do likewise. It is to be noted that a false positive serology

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occurs in one to four thousand normal people for a temporary or permanent length of time. In Yaws, they occur regularly and persistently with the case similar in pinta (especially in late cases); leprosy shows a false positive in 80 per cent of definite duration. Lymphogranuloma venereum gives about 36 per cent false positive reactions of a fluctuating length of time; lupus erythematosus in the disseminated form, 30 per cent, and the chronic approximately 10 per cent of varying length of duration.

As Lynch et al<sup>4</sup> demonstrated, vaccina is now included in the list of a course of false positives in some 16 per cent of 263 persons. Rein and Elsberg presented some interesting data on the effect of smallpox vaccines on the serologic reactions. A detailed report of their work can be found in their article. They showed that in eighty individuals who developed vaccine reactions after being given tetanus and typhoid vaccine and vaccinated (over a period of seven weeks) 51.2 per cent showed false positive serologic reactions, whereas forty-nine individuals developed vaccinoid reactions, of whom more than seventeen (34.7 per cent) showed false positive reactions. Peculiarly enough, one group given only typhoid immunization and another receiving only tetanus toxoid injections gave no false positive reactions.

As to the management of suspicious false positive reactions, we agree with Stokes<sup>6</sup>, Mohr, et al<sup>5</sup>, Rein and Elsberg<sup>9</sup> and others that it is wise to proceed with caution in instituting anti-luetic therapy. There is a great tendency to "follow the path of least resistance," treat the positive serology and not to wait until the diagnosis of syphilis is proven. There is no question that this is the easier way out, rather than to convince the patient that he must wait until there is conclusive proof that one is dealing with a true positive reaction.

#### REPORT OF CASES

CASE 1, C. C., woman, age 19, colored, single. May 20, 1946, referred because of positive Kahn test. Patient was brought to clinic because she was found to have positive serology when she sought employment. She was told that she had "bad blood" and needed treatment. History discloses that about five weeks ago she noticed a burning itching sensation on one of the lips of vagina. Her mother examined her and found a small blister and put spirits of camphor on it, causing it to dry up in a few days. No other suspicious I or II elicited elsewhere. Denies

sexual intercourse in last few months. (Hymen is not intact.) No history of sore throats, adenopathy, fever, chills, or other eruptions.

*Examination:* Essentially normal. No evidences of congenital syphilis, I or II syphilis. Examination of labia shows no scars. Vaginal examination essentially normal.

*Laboratory:* Complete blood count and urinalysis negative. Sedimentation rate 10.

*Blood test report:* 10 Kahn units. Course—no anti-luetic treatment started. 1 cc. bismuth for provocative purposes. Blood Kahn 10 units. 1 cc. bismuth given. Examination still negative for II.

May 31, 1946—Kahn 4 units. 1 cc. bismuth—Kahn taken

June 7, 1946—Kahn 4 units. 1 cc. bismuth—Kahn taken

June 14, 1946—Kahn 1 plus. 1 cc. bismuth

June 21, 1946—Kahn taken—negative

July 5, 1946—Kahn negative

July 12, 1946—Kahn negative

*Diagnosis:* Herpes progenitalis with false positive Kahn reaction.

CASE 2. Mrs. J. R., woman, age 30, white. She was first observed on February 4, 1946, being referred for antiluetic therapy because of positive serology. In November, 1945, patient started to have recurrent sore throats associated with fever for which she consulted a nose and throat specialist. The condition was diagnosed as tonsillitis and so treated. She was advised to have a tonsilectomy but waited until after the holidays. In January, 1946, she experienced another throat episode and was given sulphothiazole by mouth, and generalized itching developed. It subsided when tablets were discontinued, but her feet and hands continued to burn and itch and her throat remained sore. Numerous vesicles soon appeared on the bottoms of her feet and later her hands. She called her doctor as her throat was worse and she felt "chilly and feverish." A blood test was taken, and her throat was treated locally on February 1, 1946. On February 4, 1946, the patient was called and told to report to us, as she had syphilis. No positive history was elicited. Patient has two children, 6 and 8, living and well. Blood Wassermann reaction has been negative with both pregnancies. There had been no miscarriages, and husband was living and well.

*Examination:* Patient seen, complaining of sore throat, fever and chills, headaches and painful itchy hands and feet. Throat was quite injected with chronic, enlarged, infected tonsils. The feet and hands presented a typical picture of pustular bacterids, characterized by pustules with some vesicles scattered between them. Few hemorrhagic areas were observed throughout and much scaling of both feet and palms. No evidence of epidermophytosis interdigitally, or onychosis of nails. There was moderate cervical and inguinal adenopathy.

**Laboratory:** Kahn, 3 plus, February 6; red blood cells, 3,800,000 with 78 per cent hemoglobin; white cells 14,600 with 78 per cent polymorphonuclears; sedimentation rate 25; culture bacterids sterile; culture trichophyton toes and nails negative; sternal puncture negative; blood ascorbic determination 2.5 grams.

February 4, 1946. As it was suspected, that this case was a biologic false positive reaction from pustular bacterids, no penicillin therapy was instituted.

**Course:** February 4, a Kahn was again taken and the usual symptomatic therapy was instituted. On February 7, the patient felt and looked much better. The feet and hands were not so edematous. Her condition gradually improved. Kahn tests were repeated, and on March 2, Kahn was still positive. By March 15, Kahn tested positive 4 units. Repeated tests were gradually less positive, until April 25, when Kahn was negative and remained so.

**Diagnosis:** Pustular bacterids with infected tonsils giving false positive Kahn results.

**CASE 3.** E. K., woman, age 35, white, seen March 5, 1946. She was referred to because of positive serology that was found when she had a pre-marital examination. She stated that the first blood test, taken February 28, 1946, was 3 plus. The second one, taken by another laboratory on March 1, was also 3 plus. Childhood and adolescent history non-contributory. Appendectomy in 1932, blood Wassermann negative then. I or II elicited. There was no history of recent illnesses, sore throats fever and chills, vaccinations, exposures, etc.

**Examination:** Essentially normal. Reflexes normal. No adenopathy. Pupils react to light and accommodation. The initial laboratory examinations revealed Paul-Bunnell test negative, sedimentation test normal, complete blood count and urinalysis normal.

**Course:** Antiluetic treatment deferred and another Kahn taken which returned 2 plus (by error, a quantitative Kahn was not done). Further questioning and examination revealed no additional information. On April 17, Kahn test was positive, 3 units. On May 2, Kahn was negative, and remained so.

**Comments:** False positive Kahn reaction of unknown etiology.

**CASE 4.** J. B., woman, age 35, colored. Patient was referred on June 10, 1946, because of positive blood report found during routine pre-employment examination. Past history was non-contributory. She has two children, living and well. Blood Wassermann taken with both pregnancies were negative. Husband's blood Wassermann taken, negative; no miscarriages. No. I or II elicited, no history of recent illnesses, fever and chills, sore throats, vaccinations, etc.

**Examination:** Essentially normal, except for retroflexed uterus. Reflexes normal. Pupils re-

act to light and accommodation. No adenopathy. The initial laboratory examinations revealed in the urine and blood count were normal. Sedimentation rate, 9. Quantitative Kahn, 20 units.

**Course:** June 24, 1946, Kahn, 10 units. Gradually returned to negative, being 4 Kahn units on July 3, 1946 and negative on July 10. She returned July 22, 1946 for another blood test which was negative.

**Comments:** Positive serology of unknown etiology.

The procedures to differentiate between true and false reactions for syphilis<sup>4, 6</sup> are as follows:

1. A detailed careful history taken by one who is skillful in securing such data. Often there is a direct lead as to the cause of positive serology, such as by discovering that the patient was recently vaccinated. Is there anything to indicate a history of malaria, such as episodes of chills and fever? Any sore throat with the slightest cervical adenopathy, such as in infectious mononucleosis? How about primary or secondary syphilis, the question asked in the vernacular of the patient? Any miscarriages in a female? What about venereal disease history? Any so-called "hair cuts" on the penis in the male or sores in the vagina in the female? Any suspicious history of chancreoids? All this and more is very suspicious and often not asked and is frequently overlooked.

2. Careful physical examination not only for adenopathy, signs of congenital syphilis or tertiary syphilis but for recent acute infections (including x-ray of the lungs, examination of the spleen and sternal puncture).

3. Examination of the members of the family and sex contacts.

4. Search for malaria, parasites by blood and sternal smears.

5. Paul-Bunell test to rule out infectious mononucleosis, which gives 30 per cent to 36 per cent biologic false positive reactions.

6. Repeated determination of sedimentation rate.

7. Repeated serologic tests to be carried out by the same laboratory with the same technique. "Rein and Bossack<sup>9, 10</sup> believe (also Dr. B. S. Kline of Cleveland, Ohio, and Mr. A. Harris of Staten Island, New York) that serologic procedures utilizing Pangborn's cardiolipin and lecithin give fewer false positive reactions in certain diseases than similar tests employing the standard lipoidal antigens." This is particularly true in malaria, where the cardiolipin tests give

very few, if any, false positive reactions, whereas the other standard tests, including the Kahn, Kline, Mazzini and Kolmer tests give as many as 50 per cent false positive reactions. In their limited experience with leprosy and infectious mononucleosis, these diseases along with yaws and pinta gave false positive reactions with the cardiolipin tests. Rein further states "that although the cardiolipin antigens are definitely better than any of the previously described antigens, it will not solve the problem of false positives, because they will continue to occur even with these refined and purified antigens."

8. Test of the patient's serum by complement fixation with a spirocetal antigen; test of the patient's serum with wholly non-specific antigens, such as those prepared from bacteria; (this is not too practical or possible with the average laboratory facilities).

9. Prolonged serologic check-up at frequent intervals. In this respect, it is our policy to use the provocative procedure which was advised by Stokes, et al.<sup>7,8</sup> It has proved to be a valuable adjunct at times. It consists of injections of bismuth at weekly intervals for several injections (4 to 6), with serologic tests taken at the time of injections. In our experience to date, it frequently establishes a diagnosis of syphilis in a questionable serologic report. As previously stated, we do not regard any blood titer below four as worthy of anti-luetic therapy without other substantial evidence or a positive spinal fluid. The use of bismuth in this method does not stir up the disease (if present) and is accompanied by no therapeutic shot as was formerly seen in the daily provocative injection of an arsenical. In fact, many doubtful reports revert to negative in a few weeks of bismuth injections. Likewise, there is often a distinct provocative reaction in a previous essentially negative blood test during the rest period.

10. Examination of the spinal fluid, if the situation warrants it. This is rarely necessary if the other procedures are carefully followed out.<sup>11</sup> We believe like others<sup>4,6</sup> that verification tests are not practical in the sero-diagnosis of syphilis. In our experience, the methods presented to date do not distinguish consistently between the true and false positive serologic reactions. Rein and Elsberg<sup>9</sup> concluded in two of their articles that none of the methods are of practical nature.<sup>12</sup> As previously mentioned

in this paper, do not institute anti-luetic therapy until the diagnosis of syphilis is established.

## CONCLUSIONS

1. Biologic false positive reactions occur with some frequency. It is most important that anti-luetic treatment be withheld until the clinical diagnosis of syphilis is confirmed. The majority of false positive reactions are of the transient type and usually revert to seronegative in two or three months.

2. An irreparable harm can be done by starting treatment prematurely before an actual diagnosis of syphilis is made. Once treatment is started and the serology becomes negative the clinician does not know whether the seronegativity represents a response to the treatment or merely reflects the fact that the patient never had syphilis.

3. There is no doubt that physical and psychological damage is done by needlessly treating a patient for syphilis, unconfirmed by history or clinical evidence and strongly positive blood test. "Too many patients become and remain syphilophobias for the rest of their lives."<sup>9</sup>

4. Patients should not be regarded as Wassermann-fast (or Reagin-fast) unless they have received adequate treatment, the reagins titer remains constant with quantitative tests and these and clinical laboratory tests do not disclose the evidence of any syphilitic focus.

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## DIAGNOSIS AND TREATMENT OF CARCINOMA OF THE RECTUM

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### INTRODUCTION

AS has been aptly stated by Dr. Dan Jones, "There is no disease that can be diagnosed with more accuracy than cancer of the rectum after the patient once presents himself, and yet there are few diseases which are diagnosed so late in their course."

Carcinoma of the large bowel is second in frequency and the most curable of all internal cancers. While it is easier to diagnose than other internal cancers the delay in recognition and treatment makes it responsible for about a fourth of all deaths from malignant disease.

A review of case histories of malignancy of the rectum shows that there is still neglect of digital and proctoscopic examination of patients who present themselves for rectal problems. The plea remains as it has for years, and as it always will, for digital and proctoscopic examination in all cases of rectal bleeding. Visual hemorrhoids cannot rule out higher malignancy. It is desired to stress the fact that, since most cancers of the rectum and colon originate in lesions which are primarily benign and removable in that stage, the most important factor then is the need for the diagnosis and removal of polypi and adenomata before they become malignant. The search for such benign lesions and for early malignant growth demands proctoscopic and digital examinations. When a patient with rectal bleeding presents himself for examination, do not be content with a visual inspection of the anus to determine whether hemorrhoids are present or not but do a digital examination and a proctoscopic examination. Over a period of many such examinations there will be found benign lesions which might well protect and prevent that patient from a malignancy.

It is well to remember that the symptoms of rectal carcinoma vary widely, and any of such may be produced by other rectal or intestinal disorders. Bleeding, stool irregularity and pain are the major signs and symptoms, but the disease itself may be very far advanced when such becomes evident. We, therefore, are con-

fronted in diagnosis with a history of change in bowel habit, bleeding, vague discomfort, and that is about all. It lends support to the plea for digital and proctoscopic examination with even the slightest complaint or sign present in the anal area.

Proctoscopy is not something that need be relegated to the specialist but one examination that should be in the armamentarium of every general practitioner. Proctoscopy is a simple office procedure that can be done without any special table and in so doing at least 75% of carcinomas of the colon can be found by this examination. As far as biopsy goes I feel that it is certainly an indicated procedure and again can be done in the office without any specific type of equipment. The biopsy need be taken carefully and particularly at the edge if possible.

X-ray examination is certainly indicated should digital and proctoscopic examination be negative. It is only fair to tell the roentgenologist exactly what you are looking for and give him sufficient of the history to enable him to approach his problem in a scientific manner. It may be that you are interested in further polyp formation and therefore a contrast study is indicated. I certainly feel strongly, however, that digital and proctoscopic examination should first be carried out prior to any roentgen study of the lower large bowel.

If all the studies are negative I certainly would not dismiss the patient with a few simple instructions, but would keep him under observation for a period of one or two months.

### INCIDENCE, SYMPTOMS, LOCATION AND TYPE

Statistics taken from several of the larger clinics all have characteristic mean averages. Approximately 62% of the patients are male and 38% female. 90% average over 40 years of age, with the mean age average of 55 years. Under 10% will average to 40 and 10%, 60 to 70. As to average of symptoms 85% had noticed a passage of blood and in approximately 66% discomfort was a feature. The passage of mucus or change in stool habit was noted

\*American Board of Surgery.



in approximately 60%. The duration of the chief complaint averaged less than one year in 60%.

In regard to location, again average statistics show that the anus, rectum and rectosigmoid are responsible for approximately 60 to 65% of the malignancies in the colon and rectum. Further distribution in the colon shows that the sigmoid, the descending colon and the splenic flexure are responsible for approximately 20 to 25%, the transverse colon accounts for approximately 5 to 7% and the hepatic flexure, ascending colon and cecum approximately 12 to 14%.

The type lesions noted average as follows: Adenocarcinoma 94%, epithelioma 3%, colloid carcinoma 1%, other such as melanoepithelioma, lymphosarcoma 2%.

It has been very aptly said by Buie that "The average patient who comes to the surgeon with a rectal carcinoma is a man about 55 years of age who has been sick for about 8 to 10 months. His illness has usually been characterized by rectal bleeding, a sense of incomplete evacuation and discharges of bloody mucus instead of feces. His discomfort usually is rather obscure but is more noticeable up "inside" the rectum and lower part of the abdomen. The growth is found in the upper half of the rectum and often is annular and large. It is almost always an adenocarcinoma and produces a very moderate, mild degree of obstruction."

#### SPREAD OF MALIGNANT DISEASE OF THE RECTUM

By an intelligent use of the knowledge we possess much can be done to relieve symptoms, to prolong life, and to increase curability of rectal malignancy. This means that in the treatment of cancer of the rectum a well planned operative procedure must carry with it a definite knowledge of the lymphatic drainage and other means of spread of the local malignant lesion. The lesion in the rectum can spread in any of three distinct ways:

1. By direct extension
2. By the venous system
3. By the lymphatic system.

The growth may spread locally to involve any of the adjacent pelvic organs or may spread through the rectal veins to the portal system, and then to the liver. Most important type of spread is definitely in the lymphatic system. It is well to remember that there are three

groups of lymphatics involved; the intramural, the intramediary and the extramural. The first are those contained in the wall of the rectum in two networks, one in the mucous tissue and the other between the muscular layers. The intramediary system consists of subserous network of lymphatics in the portion of the rectum covered by peritoneum and lymph sinus situated between the external muscular coat and the perirectal fat in that part of the rectum which has no peritoneal covering. The extramural lymphatic system is the most important of these and may be considered in three divisions, all of which are intercommunicating. They may extend downward to the perianal skin, ischiorectal fat and about the external sphincter. In the zone of lateral spread are the levator ani muscles, the coccygeal muscles, and the pelvic peritoneum as well as the prostate, bladder, uterine cervix, broad ligament and the internal iliac nodes. In regard to being spread upward the growth may extend to retrorectal nodes, the pelvic mesocolon, the pericolic lymph nodes, the lymph nodes at the bifurcation of the iliac arteries, the aortic lymph nodes. The majority of the different lymphatics of the extramural system pass through or end in this latter zone and it is therefore the zone of principle paths by which spread from the primary rectal growth occurs. Miles found that regardless of the early stages of development metastasis were found scattered throughout this zone in practically 100% of cases.

At this point it is well to mention that the investigation of lymphatics made by Montagne divided the rectum into two parts, high and low rectum, the point of division being the third valve of Houston. He agrees with Miles that the treatment of cancer of the low rectum is by the combined abdomino-perineal route because there can be upward extension, but feels that the high rectum lesion can be treated by abdominal operation alone because there is no downward extension. T. E. Jones feels that this might be quite true theoretically but practically the dividing line is so narrow that from an operative and curative standpoint depending upon the abdominal operation alone is quite unsafe.

#### OPERABILITY

Any operation for cancer of the rectum or rectosigmoid must completely remove the disease. One of the most striking changes in the



management of carcinoma of the colon and rectum within recent years has been a definitely increasing operability or resectability. The operability in any series of cases depends upon the extent of the lesion and the presence of local or distant spread. Also of consideration is the general condition of the patient which may be such that resection is not justified and quite properly the experience of the surgeon which in a large measure will determine his operability. If a surgeon considers only 20 to 30% of his total number of cases operable, it stands to reason that his percentage of cure will be greater than that of a man who operates upon 60% of his patients. It is necessary to emphasize the fact that even if we cannot cure a patient we can often make him more comfortable for a time, and in our desire to produce a high percentage of cures we must not lose sight of the duty of palliation. Any statistics pertaining to cures should include the percentage of operability in certain types of cases. The operability rate in all large clinics in the country has been on the definite uphill climb for many years. Reports today show that upon the average the operability rate has risen in such cases to an average of about 75%. As experience continues the surgeon finds himself increasing his rate of operability even at the expense of greater mortality and as a result is having a higher per cent of five-year cures. The surgeon must adapt his procedure to the age of the patient, his obesity, heart or kidney disease, diabetes, and local extent of the growth as well as metastases.

It is my opinion that even in the presence of small to moderate size metastasis in the liver, which do not indicate an immediate demise, surgical excision of the local lesion should be undertaken in order to prevent all of the difficult complications which plague these patients should the local growth remain untouched. The removal of the mother growth not only delays death from distant metastasis, but the relief from the distressing symptoms due to the local growth is well worth the risk involved.

Another factor that should be mentioned is that this condition is not an emergency unless there is definite obstruction. It is well to warn the family not to become hysterical, and that further investigation of the patient is necessary. This is particularly true if there is any suggestion of cardiovascular-renal disease, diabetes, etc. It is also true in men of the middle and

upper age groups wherein genito-urinary disease, and particularly the prostatic obstructive type of affair may be present. Certainly a patient should be admitted to the hospital at least 6 to 7 days prior to surgery and a complete cleansing regimen carried out. X-ray of the chest should be done and further procedures carried out that will lessen the complications post-operatively.

#### SELECTION OF OPERATION

Monihan once said, "The surgery of malignant disease is not the surgery of organs, it is the anatomy of the lymphatic system."

Many operations have been devised in an attempt to retain the sphincter so that a permanent colostomy will not be necessary. However, it is my opinion and also the increasing opinion of authorities in this subject that the rate of curability does not seem to justify the use of such procedures. It is quite true that there are many cases where the lesions are undoubtedly limited to the mucosa and are without glandular involvement. In such cases it may be well to use the electro-coagulation and radium, but if one were to do the more extensive growths by this method I feel quite sure that he would not be impressed with the treatment from a percentage curative standpoint. More and more surgeons are adopting the radical operation of a one stage combined abdomino-perineal resection of the rectum in a larger percentage of cases with a concurrent increase in the operability figures yet without sacrificing mortality statistics. While the procedure of one stage combined abdomino-perineal resection of the rectum is an extensive procedure, it is true that if one meticulously follows the technic and masters a methodical approach, his mortality figures can be kept well within acceptable limits of 10%.

Jones states that a lesion whose lower edge is at the peritoneal reflection of the rectosigmoid or two inches above it, should have the same operation as those listed under carcinoma of the rectum, that is abdomino-perineal resection.

It is appropriate at this time to mention gradation of tumors according to the notation, grades 1, 2, 3 and 4. Grade one is supposed to be a slow cancer and grade four a very bad one. It seems that grades 1 and 2 are to be approached surgically, but it is not good to approach those of grades 3 and 4 because of their obvious rapid spread. I completely disagree with such an

attitude because I feel that clinical judgment surpasses any laboratory test in regard to decision of treatment. If a cancer of the rectum proves by examination to be clinically operable, regardless of whether it is a grade one or four, surgery should be carried out.

Location and fixation have a definite bearing upon operability since any extension of the lesion to the bladder, prostate, seminal vesicles, etc., ordinarily is approached with extreme caution. It is quite possible, however, to remove parts of these organs along with the malignant growth and further enhance curability of the patient. It is impossible to determine many times whether or not local extension and fixation is malignant or inflammatory. I feel that our only hope in curing more of these patients is to extend our procedures still more radically within the limits of our capabilities.

The size of growth is ordinarily not a discouraging factor since I have seen many cases with large, bulky adenocarcinomatous type of growth with no regional metastasis and lacking any local invasion. Individualization enters into these problems of metastasis.

When a case has metastasis of the liver it certainly makes it incurable, but the local lesion may be entirely operable and should be removed if danger of obstruction or ulceration is present. To see a patient die with an ulcerating, invading type of carcinoma of the rectum is horrible. A patient can die quite comfortably by metastasis, but certainly I do not feel justified in leaving an ulcerating mass in the rectum. Palliative colostomy is not the answer in such cases since it leaves the patient with his original growth.

The idea that a restricted operation gives as good results as an extensive operation just because an occasional surgeon has had a patient live five years or more after such an operation, is unfounded. The value of such a statement depends on type of growth, local extent, number of cases operated on, the mortality and the patients living in comfort three, five or more years. Unfortunately we find some men who will admit that they do a limited type of procedure because their mortality is therefore lower, and it makes a better impression.

#### ACCEPTANCE OF COLOSTOMY

As D. F. Jones stated so adequately "The condition of patients after removal of the growth

and a colostomy cannot be compared with the physical discomfort, displeasures, and mental effect which follows a simple palliative colostomy."

The preliminary discussion with the patient regarding a permanent colostomy should not be brusque nor yet evasive. One should reassure the patient that complete removal of the growth is the only cure of the disease and is the object of surgery. If this can be accomplished and the rectum saved, it certainly will be saved. However, if necessary to sacrifice the anus in order to preserve life, then this, too, will be accomplished. The patient should have careful explanation as to why the abdominal colostomy is compatible with a complete normal life, and be shown, if possible, other patients who live a normal life with such an opening. I believe that any patient can be placed in a proper frame of mind if the necessity for such a stoma is explained to him and the ease with which it can be cared for postoperatively. The patient can be assured that he can return to a normal, active life without embarrassment and with a minimum of care to the colostomy. The day of the colostomy bag is gone and the patient need not be afraid of a foul-smelling, catch-all type of apparatus. While there are still a great many men who favor the perineal colostomy, I personally do not feel that the operation is as radical in its approach to curing this condition and, based entirely upon experience with patients, that the abdominal colostomy is more hygienically correct and more acceptable to the average patient.

Jones said, "The most constant objections to a permanent colostomy are those who do not have them and those who do not need them to remain alive." Good surgery can not be based upon the occasional lucky case or unusual condition. Sound cancer surgery should not be sacrificed.

Statistics show that the lowest mortalities, the highest operability rates, the greatest percentage of cures are obtained by those whose practice it is to widely remove malignancy.

#### OPERATIVE PROCEDURE

It is not my intention at this time to go into all the details of the one stage combined abdomino-perineal procedure as popularized by Miles. This technic is quite well standardized and when used by a surgeon interested in this disease, can be

adopted quite easily to the patient regardless of the local extension of the growth. This is to say that there are modifications of this procedure which are essential in many cases dependent entirely upon the situation at hand.

The incision as used in my hands is that of a midline. I find that the colostomy stoma can be placed in the midline and if a bandage is desired to be worn by the patient, it will not be disfiguring by being off center. I do not feel that the muscles of the abdomen have anything to do with the size of the stoma, however, this point is of minor importance, and many men use a laterally placed stoma or a split rectus type stoma with equally good results.

The resection is started by first ligating the blood supply to the area to be removed without disturbing that of the proposed colostomy. This is a point which is easily determined by the surgeons knowing his anatomy and ordinarily is not a complicating factor. Resection is then carried out in the usual manner by dissection from above downward, making sure that the lymphatics are included in the wide spread dissection. If the local growth has extended into surrounding pelvic structures, many of them can be easily sacrificed, such as broad ligament, cervix, uterus, portion of the bladder, etc. If one has any doubt as to the resectability prior to division of the superior hemorrhoidal artery, the lateral peritoneum at the peritoneal reflection should be divided and the finger inserted down to the growth. By this means one can determine the resectability, and if local extension is beyond feasibility of resection, then of course the blood supply should not be disturbed.

The most important note to make in regard to this surgical procedure is the fact that 90% of the dissection is done superiorly. Dissection should be carried down to the perineal floor to the point that the tip of the coccyx can be easily felt and the rectum separated in the male down to the prostate. The rectum is separated by careful dissection from the posterior surface of the bladder and then divided at the level of the desired colostomy. The inferior portion is tucked down into the pelvic space and the peritoneum closed. The abdomen in my cases are closed with Tom Jones figure of eight, steel wire. I have not seen any eviscerations or wound infections with the use of this wire. It was found by Dr. Jones operating at Cleveland Clinic that with the use of steel alloy suture the instances

of wound infection dropped to 0.85%. Dr. Jones feels unquestionably that his mortality in this type of procedure, which is 4.5%, is brought to that enviable level by this type of closure. This, in my opinion, allows the patient to get up early and affords a maximum of strength without strangulation of muscle, as well as being completely non-irritating.

Another factor that should be remembered is that the colostomy is not anchored to the abdominal wall by any suture in the serosa. If it is felt that some sort of support is required or necessary, simple suture of the appendices epiploica is done.

Patient is then turned into the Kraske position and the dissection from below is relatively simple. The wide gaping wound is then packed with an amputation roll into a piece of soft rubber dam and the skin closed around such by means of a subcuticular steel wire.

The technical procedure of this operation is really not difficult. It depends entirely upon the complete understanding of the anatomy and then the carrying out of the technic by definite steps. Of equal importance is the adequate pre- and post-operative care.

#### PRE-OPERATIVE CARE

It is my practice to follow a regimen similar to that established by Dr. T. E. Jones of the Cleveland Clinic to whom I am greatly indebted for his careful teaching practices. It is his routine to keep the patient in the hospital approximately one week prior to operation. During this period of time mild saline laxative is given by the use of diluted magnesium sulfate and daily enemas to adequately decompress the bowel. Since many of these patients have been dieting for bowel trouble and have lost weight the patient is placed upon a high calorie low residue diet with supplemental vitamins and iron given. If the patient happens to be anemic he is given pre-operative transfusion and always transfusion at the operative table. Since this disease occurs more frequently in males and since they are in the upper age group cystoscopic examination is of importance should there be any symptoms of urinary obstruction. It has been found that prostatic hypertrophy is a major cause of urinary difficulty post-operatively and often transurethral resection will enable a patient to have a comfortable post-operative convalescence devoid of catheterization, drainage,

etc. An x-ray of the chest is of extreme importance as is the investigation of any questionable cardiac irregularity.

The use of intraperitoneal bacterial vaccine prior to surgery is advocated by many men, but I frankly have had a very limited experience in its use and find that my results are not altered by such vaccine.

Succinylsulfathiazol, however, I feel is definitely justifiable. During my first connection with these cases the use of sulfa drugs was not the practice since it was the opinion that meticulous surgery is sufficient protection alone, and one should not rely upon sterilization of the colon as a method of safety. With this I heartily agree, but I feel that any procedure directed toward improving or rather preventing complicating factors such as peritonitis is of value, and as succinylsulfathiazol has a very low toxicity and does definitely reduce the number of colon bacilli, it has been my practice to utilize this drug pre-operatively. I plan to continue the use of succinylsulfathiazol but do not plan to depend upon it.

#### ANESTHESIA

In regard to anesthesia I feel that the spinal anesthetic has proven itself to be the most acceptable by the majority of surgeons interested in this problem. Since the operative procedure takes only 1 to 1½ hours, spinal anesthetic need not be heavy in dosage and relaxation is maximal. While the patient is on the operative table transfusion is automatically given. It is well to note that when the patient is turned from the supine to the Kraske position that the blood pressure will drop. It has been found that this can be controlled with blood transfusions as well as one of the vasopressor substances given a few minutes prior to turning. Sims or lithotomy position can be used adequately, although dissection from the prostatic bed is more difficult.

#### POST-OPERATIVE CARE

The post-operative care in these patients is precise but not difficult nor unusually painful if it is carried out carefully. In regard to the care of the colostomy; it ordinarily is opened at the end of about a 48-hour period, although no bowel movement is expected for about five to six days. The patient begins eating a regular diet approximately the fourth day and is given mineral oil merely as a form of lubrication. If no bowel movement is experienced by the sixth,

oil retention enema is given into the colostomy stoma. The wound is cared for in the usual manner and the colostomy, which protrudes varying distances from the skin, is trimmed to skin level with eversion of the mucosa to about the tenth day. This affords the patient with a flat colostomy which, when maximum contraction has developed, will shrink down to the point that it can be covered easily with a fifty cent piece. With the colostomy flat upon the abdomen there is a minimum of irritation and this has not been a factor of complaint by the patient. The posterior wound is cared for by removing the packing within the rubber dam one-half upon the second day and the remainder upon the third. The posterior wound is then irrigated daily by means of a long douche nozzle, using either potassium permanganate solution or sulfamilimide solution. About the tenth day irrigations are stopped and the wound is merely cleansed by means of a long cotton-tipped swab. This can be done by the family, and the patient ordinarily leaves the hospital at about the fourteenth or fifteenth day. The wound closes approximately in twelve to fourteen weeks. It has been found that these patients can be up at about the third or fourth day, and in so doing the peritoneum will, by means of the weight of the intestinal contents, slip down into the posterior wound and effect closure much more rapidly. I have found that using early ambulation has prevented many complications that I have seen before, namely, thrombophlebitis, pulmonary embolism, atelectasis, excessive delay in wound closure, and general weakness. I am not a radical advocate of early ambulation, but I feel that in selected cases of this type early ambulation certainly has done a great deal toward hastening the convalescence of these patients.

Constriction of colostomy stoma occurs in approximately 5 to 7% of the cases sufficient to warrant reconstruction to the colostomy. The corrective procedure for such a condition is elliptical dissection of skin and fascia from about the colostomy opening with reconstruction of the mucosa being brought out to the skin edge. I have not seen a case which required this procedure more than once.

#### MANAGEMENT OF COLOSTOMY

It has been the practice by many surgeons that upon discharging a patient from the hospital to tell him or his family to go to a surgical



house and buy a colostomy bag. I believe that this is a sure way to make the patient disgusted with both the colostomy and himself. For that reason the use of the colostomy bag has grown into disrepute and has been abandoned by many men. The colostomy can be cared for easily if the patient is carefully instructed both as to why the colostomy will function with care and how to care for it. If the patient is told that the colostomy must regain rhythmic function and such function can be re-established by habit formation in the use of intermittent enemas, he will then accept the colostomy more easily and will do everything in his power to establish a routine. The patient is given instructions in regard to enema by the use of small rubber flange through which a soft rubber catheter is inserted for a distance of about four inches. The rubber flange prevents reflux of enemas fluid and allows the patient to satisfactorily give himself the enemas. The enema consists of warm, plain water, approximately only one pint. The enema is taken every 48 hours at the same time of day, and that time is to correspond to the period when he normally had a bowel movement prior to surgery. Ordinarily the patient will get complete evacuation of the colon within 30 minutes. It has been found in hundreds of cases that the average patient will have no spillage or soiling during the interim between his enemas, a period of 48 hours. I had the privilege of following approximately 250 cases of this nature, and I found that it was a rare patient who did have difficulty, or who did not pay sufficient attention to his routine and failed to establish a habit. The usual case will, at the 48-hour time, show and have the sensation of bowel action. Many state that they feel as if the bowels want to move through the rectum. It takes only a small enema at this time to evacuate the bowel quite completely. It seems rather absurd but I have had several patients who state quite honestly that "I am rather surprised that nature did not place the anus on the abdomen since it is so much easier to keep clean and take care of." There are many advocates of the perineal anus in these cases, but after having had experience with such in a selected series of cases I sincerely feel that the abdominal colostomy is not only easier to take care of, but the procedure in the formation of such colostomy affords the patient a greater percentage of possible cure in the eradication of his disease. A word as to diet.

Common sense will enable any patient to eliminate from his diet any particular food which seems to present undesirable symptoms, mainly diarrhea. I do not favor the prescribing of a constipating diet, but would rather leave it to trial and error for the patient to determine what foods definitely produce a diarrhea.

#### SURVIVAL RATES

On the average, taking a series of approximately 200 cases, the following operability and survival rates will apply. Approximately 20 will refuse treatment or will fail to return following diagnosis. Another 40 will be judged inoperable and may or may not have palliative procedure. This leaves 140 or 70% of the original 200 that will be subjected to exploration. Of this group about 30 will be considered inoperable, leaving, therefore, an operability percentage by the average surgeon of around 50-60%. The remaining 110 which are subjected to resection will have combined one stage resection in 100 and other stage procedures in about 10. Of the 110 cases operated, approximately 50+%, or about 55, will survive 5-10 years. The remaining 55 will die from recurrence, and about 1-10% post-operatively. We see, therefore, that our operability rate should run 50-60%, our survival rate 50+% and our post-operative mortality 1-10%.

#### SUMMARY

In summary I merely wish to again impress the necessity of digital and proctoscopic examination for any patient who complains of rectal bleeding, discomfort or change of bowel habit. It is also necessary to keep in mind that many early benign lesions can be diagnosed and removed, preventing formation in a certain percent of cases of malignant lesions. I speak of polypi and adenomata. The opportunity to attack the problem of carcinoma of the rectum by the early discovery of such pre-malignant lesions and their removal through the proctoscope should be and is stressed. One of the most important things to remember is the fact that one needs to be aware that life with a colostomy in a patient cured of cancer is a much more satisfactory condition than life with a palliative colostomy for inoperable carcinoma. This very important and generally unrealized truth has been stressed by Frank Lahey, who makes the interesting observation that failure to realize the



change that has taken place in the sequelae following colostomy is still holding people back from being cured of carcinoma of the rectum. The mortality in this surgical procedure should not be over 10%, in hands who understand the disease and its surgical approach. The percentage of non-recurrence at the end of five years should average between 40 to 50%. It should also be remembered that palliative resection is justifiable and often advantageous if it can be done with mortality which is not too prohibitive.

I feel that increasing the percentage of operability is the scope of our interest in this disease. As each surgeon's experience increases, the per cent of operability will increase and result in more frequent cures upon patients who have been felt incurable. It would be a very fortunate thing if the surgeon could see the time arrive when we could treat cases as benign polyps or as very early mucosal carcinomata and use coagulation and radium. This would produce a tremendous high percentage of cures, and it depends entirely upon early diagnosis.

It is so easy to examine a patient, talk to him, prescribe for his ills and fail to do a digital examination. A great many carcinomas of the rectum would be discovered daily if digital examination was done upon every patient who enters a physician's office throughout this United States. Dr. Payne Palmer recently stated that there are 50,000 undiagnosed carcinomas of the colon and rectum in this country.

I feel that at the end of our index finger lies the answer to the increasing curability rate of malignancy of the area under discussion, and I feel quite sure that all of us can by the use of this digit aid in the approach to this problem.

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## MISCELLANEOUS SECTION

### The Blue Cross and Blue Shield Plan

ADDRESS BY ROY E. LARSEN,  
President, Time, Inc.

Dinner Meeting, Blue Cross Commission and  
Blue Shield Commission

Washington, D. C., January 10, 1948

General Gray, General Hawley,  
Distinguished Guests:

It is an honor to be your toastmaster tonight for this big occasion, which marks an important development in the history of a great and uniquely American project and in the career of a great American.

I hope you here tonight who have been so largely responsible for the development of the Blue Cross and Blue Shield Plans in the many regions of our country can put out of your minds for a few minutes all the myriad of problems which are always confronting pioneers while an outside observer tries to describe what you have accomplished. If you could stand far enough aside to get a perspective on what you have been doing on the national scene, I think it would look, in broad outline, something like this:

Nine years ago, when Federal Health Insurance legislation was first introduced in Congress

in the Wagner Bill, there was no sufficient answer to the declaration by the sponsors of the proposed compulsory health insurance that "voluntary plans just won't meet the need." The Blue Cross Plans for voluntary prepaid hospital insurance were just beginning to show their rapid growth.

By January 1937, there were 28 Blue Cross Plans in the U. S., with 534,000 participants.

Today, eleven years later, there are 85 Blue Cross Plans in the United States and, in addition, five in Canada and one in Puerto Rico. In all, there are nearly 30 million subscribers! To be exact: 29,250,000.

But the significance of these figures today is not in their present numbers, but in what they portend for the very near future. For this is the method a large majority of American citizens will have chosen freely and spontaneously to avail themselves of the best hospital and medical care in the world and to provide for its cost.

The businessman's question is: What is the potential market for the Blue Cross and how long will it take to cover it completely? This is a fair question and an important one, if the Blue Cross method is to be considered as the voluntary answer to all-embracing compulsory

Federal insurance. For critics of the voluntary movement still say, "The Blue Cross Plans are fine, but they do not go far enough. There are," they point out, "97 million people, or 69% of all American families, with incomes of less than \$3,000 a year, who need health protection." Few will dispute their premise or their figures.

A manufacturer often tries out a new product in one small section of the country to determine its acceptance and its market. He then projects his findings to a national scale. Let us do that with some of the Blue Cross figures.

In Rhode Island today (January 1, 1948) 65% of the entire population of the state are enrolled in the Blue Cross Plan.

Projected nationally to our 140 million population, that means 91 million members. But perhaps Rhode Island is too small a sample on which to base such a projection.

Let us take the *three* states which now lead in percentage of enrollments: Rhode Island, Massachusetts and Delaware. 52% of the entire population of these three states are already enrolled in Blue Cross. Projected nationally that means over 70 million.

Such projected national figures may seem fantastic and unrealistic, unattainable by any one voluntary project. But the fact is that such coverage has already been attained in three states and the saturation point has not yet been reached.

Each year the skeptics have predicted the near end of the incredible rate of growth of these plans. Each year to date they have been wrong. In the past three years, enrollments have nearly doubled, going from 16 million to the present approximate 30 million. And at the 15% national average rate of increase of the past year, it would take only five years to double the present 30 million figure, and eight to approach the 100 million mark. It should be noted that, in addition to the present 30 million Blue Cross members, there are some 10 million people covered by commercial insurance policies. In other words, 40 million people are covered today by some form of hospital insurance.

Consider that the Blue Cross enrollments to date have been achieved in the face of imminent possible action by the Congress and by certain states on legislation for compulsory insurance. In recent years, 250 different bills have been introduced in Federal and State legislatures proposing to nationalize or socialize the administration of medical care. The Wagner-Murray-Dingell Bill, which would finance medical care by universal compulsory insurance, is still alive.

With such an unprecedented record of acceptance by the public and with good reason to believe that an enrollment approaching 100 million is an attainable future prospect, surely Blue Cross sponsors can justly ask the government for encouragement of this voluntary movement rather than precipitous legislative compulsion. I have one suggestion for Government encouragement which I shall mention later.

Hospitalization is, of course, but part of the individual's health cost problem. For many understandable reasons, the problem of the doctor's bills has been harder to solve by the insurance method. To work out an insurance plan with 3,800 U. S. hospitals is relatively a simple matter compared with the problem of making satisfactory and uniform financial arrangements with tens of thousands of individual U. S. doctors. But many thousands of doctors have and thousands more are working it out in one community after another.

Under the Blue Shield Plans for voluntary prepaid medical care insurance, full protection against medical bills is now being offered to those earning up to \$2,500 a year, and part protection for those with higher incomes. The cost is only slightly higher than for the hospital plan and the subscriber has completely free choice of his doctor. And, as with the hospital plan, he receives his benefits in service rendered.

The Blue Shield movement is relatively new and relatively unknown. Two years ago there were but 31 Plans in the U. S., with 2,840,000 subscribers. Today there are 48 Plans throughout the country, with more than seven million subscribers. Again we are confronted with growth figures which challenge credulity. And yet here projections can be made with a certainty that has never been possible for the pioneering Blue Cross.

Already, six states have more than 15% of their population protected by Medical-Surgical plans. Delaware leads with 41% of its population enrolled.

The fact is that Blue Shield Plans and enrollments are developing at a rate even faster than the astounding record of Blue Cross. With experience and the increasing sponsorship of individual doctors have come additional benefits, and increasingly attractive policies have in turn speeded the enrollments.

At the present rate of Blue Shield enrollments, the 30 million mark would be passed by 1951. Thereafter, they should catch up with the ever-mounting Blue Cross memberships.

Never in the history of this or any other country has there been such a voluntary development affecting, in such a personal and important way, the everyday lives of so many million people.

Never has a movement held so much promise for the future—a promise almost assured by its record of the present and past.

I have over-simplified my description of the record and forecasts of the future, because I wanted to put into bold relief a ground swell which, through lack of all the usual good old American ballyhoo, has developed—and is continuing to develop—relatively unnoticed, right under our eyes.

While the social planners have called for immediate medical protection for all by the Federal government no matter how unblazed the trail, no matter what the cost in dollars or in

risk to the quality of our still independent medical and hospital services, 30 million people have ensured for themselves the highest quality hospital care when they need it, and have protected themselves in their own free way against this most serious and uncertain of personal and family financial risks.

As a businessman, I am proud of the fact that one of the important reasons for the phenomenal success of this movement has been the co-operation given it by the managers of U. S. business. Five hundred thousand employers in the U. S. have been interested enough in the health of their employees to offer them these prepaid health plans, either free, by sharing the cost, or by allowing payroll deductions in order to make premium payments convenient for them.

Missing from the list of co-operating employers is the biggest employer of all—the Federal Government. If it is true that actions speak louder than words, I cannot resist pointing out that in this important instance the much-maligned American business manager is way ahead of a Federal Administration which has preached medical protection for the low-income-group wage-earner for the past 15 years. Only 300,000 of the two million Federal employees now participate in Blue Cross Plans because of the difficulties of handling subscription payments without the co-operation of the employer. There are 3,500,000 additional Federal employees and dependents who should be allowed the same privilege in this connection as the employees of 500,000 private employers. Such action by the nation's largest employer would stimulate similar action by many State and municipal employers not now co-operating.

In my over-simplification of the history of the development of these voluntary health plans and my projections of their enrollment figures, I may have given the impression that, to me, continued success seems easy and inevitable. My confidence in their future is tempered by my knowledge of just a few of their current and potential problems.

I, too, have questioned my own projections as to the future possibility of 100 million enrollments in these Voluntary Health Plans. But I have recently analyzed some of the other things which Americans have secured for themselves and their families in an almost universal and certainly completely voluntary manner. I find that there are 176 million life insurance policies in force in the U. S.; that 120 million people have 73 million radio receiving sets in their homes; that 90 million have telephones; and that 22 million families (some 90 million people) have at least one automobile. I find that the registration fees for these cars alone are 550 million dollars a year, and just the *taxes* on the gasoline used to operate them totaled over a billion dollars in 1946. Certainly the demand for these Health Plans should be as great as for life insurance, automobiles, radios, and tele-

phones. And there should be no question as to the ability of 100 million people to avail themselves of them.

The question is whether the Blue Cross and Blue Shield Plans are organized to reach and cover all their prospects.

The time has come when these 150 different hospital and medical plans must be co-ordinated to represent a single national voluntary health movement. Certain conflicts of interest in the two fields must be overcome to this end. The individual community plans must always be geared to local needs and conditions. However, a unity and co-ordination between plans must be achieved and a national organization established which can provide nation-wide business with a more uniform and widespread coverage than is available at present. The plans for such an organization now under way should have a high priority in the future program.

As the voluntary National Health Movement, the Blue Cross and Blue Shield Commissions owe it to all their many million members to keep the entire country regularly informed of its nation-wide progress.

My confidence that the future's problems of co-ordination will be solved—that progress to date will be consolidated—that standards will be maintained and improved—that enrollments will continue to increase—stems from the important news of this meeting.

That news is the announcement which I have the honor of making: That General Paul R. Hawley has accepted the top responsibility in this great movement as Chief Executive Officer of the Blue Cross and the Blue Shield Commissions. It will be to him, from here out, that the country will look for the leadership of these Voluntary Health Plans.

His new associates of the Blue Cross and Blue Shield Plans are here tonight to welcome him.

They could have no abler, no finer leader.

## EXPERIMENTS IN MEDICAL INSURANCE

Prepared for Presentation by Doctor Bortz  
at the Washington Dinner Announcing General  
Hawley's Acceptance of the Blue Cross

A. M. C. P. Position

Mr. Chairman, General Hawley, and  
Distinguished Guests:

The meeting this evening is a significant milestone in the history of medical service. I have been directed by the Officers and The House of Delegates of the American Medical Association to bring you their best wishes and congratulations.

Among the major objectives of organized medicine are the encouragement of medical education for the profession, health education for the public, and research in the various fields bearing on medical science and medical service to the nation. Advances in medicine have extended



the life span approximately twenty-eight years during the past century. Significant discoveries are occurring with increasing frequency as the scientific method is being applied to more and more of the problems.

As costs of modern medical care are increasing, one of the major interests of the American Medical Association is in the field of voluntary prepayment plans for hospital and medical care. This is a field of recent origin. It has developed because of the variety Medical Association is in the field of recent of new and oftentimes expensive procedures essential to the utilization of modern medical services. Since no sufficient actuarial figures are available, various approaches which offer some promise must be examined and their possibilities explored. The first essential in the creation of an insurance program is the selection of criteria on which such a program is to be based. Principles must, perforce, be established. These should be agreed on and accepted by all interested parties. The American Medical Association, through its Council on Medical Service, believes that these principles should be sufficiently broad and promising as to guarantee a continuing high level of efficient medical care for the insured. Voluntary prepayment plans for hospital and medical care within the American system of individual initiative and freedom of enterprise include the creation of voluntary, non-profit prepayment plans for the costs of hospitalization, such as the Blue Cross plans, and voluntary non-profit prepayment plans for medical care such as those developed by many state and county medical societies. The utilization of private sickness insurance plans which comply with the state regulatory statutes and the standards of the Council on Medical Service of the American Medical Association is to be encouraged.

It is important to keep in mind that we are blazing new trails in the field of medical service, and, likewise, in the insurance field. Certainly many visionary suggestions, impractical of application, need to be critically surveyed before they are approved. Also, modifications of plans which have been accepted will appear advisable as time goes on. As experience is gained in various areas of the country and data is accumulated, better methods of meeting the costs of medical care through voluntary prepayment plans will appear. As a result of this experimentation and accumulated data, commercial carriers have become interested in the field and should be able to make a definite contribution. The primary interest of the American Medical Association is in guaranteeing a high quality of professional service. It is necessary that the Council on Medical Service examine various plans; those found acceptable are given the "Seal of Approval" if they meet the Council's standards.

An all-time high in the number of persons covered in the United States under programs designed to meet the costs of accidents and ill-

nesses is certain according to preliminary results of a current survey of our Council on Medical Service. A comprehensive study is now nearing completion by a subcommittee of the Conference Committee on Health Insurance. Preliminary information developed by the study indicates that as of December 31, 1946:

1. More than half of the total working population was covered against loss of income due to accident or sickness—approximately 30,000,000.
2. Over 40,000,000 agreements were in effect providing protection against the costs of hospitalization.
3. Over 17,000,000 agreements were in effect providing benefits for the costs of surgical care.
4. Over six million agreements provided medical benefits (other than hospital or surgical).

Even more impressive totals are evident if the true figures were all up-to-date. During the first nine months of 1947, medical care plans sponsored or approved by the medical profession increased enrollment by 2,000,000. Blue Cross enrollment increased more than 3,000,000 during the same period. In addition, many insurance companies and insurance associations are reporting encouraging sales increases over previous years.

In enumerating some of the strength of non-governmental medical care plans, Mr. W. R. Williamson, one-time advisor to the Social Security Board, recently stated . . . "The plans stress personal recognition of responsibilities and the development of sound facilities to meet them. They avoid the negative and demoralizing pretense that the citizen 'is unable to see his duty and meet it.' They give the potential member credit for basic competence and reliability and the wish to care for his responsibilities. These plans can build character and reliance."

Mr. Williamson emphasized, in addition to other strengths of the voluntary plans, "Facilities for sound administration have more of a chance to keep pace with the requirements than is possible when a backward nation adopts a medical care plan before it possesses the facilities to make it work. This possession of facilities avoids the protests over failing to live up to premature promises. 'Let us pass a law' is bad advice, when the laws do not represent broad public opinion."

The meeting this evening is one of the highlights in this important field of medical insurance. The appearance of Dr. Paul R. Hawley as director of the dual program for medical service and for hospital care augurs well for the future. General Hawley has the support and confidence of American medicine. He has won his spurs the hard way; his interests are broad; his philosophy is sound, and he is "one of us," so to speak.

General Hawley, let me assure you that you

have the militant support of the American Medical Association and its Council on Medical Service in your hope to develop within the American system of individual initiative a voluntary prepayment program for hospital and medical care that will extend the benefits of modern scientific medicine to all elements of our population. The doors of our Association are open to you at all times. Our Officials are yours to call on; indeed, you are a member—one of the most distinguished members—of the medical family of our land. In view of your past accomplishments, it is not too much to say that our hopes are high as we anticipate the future.

Edward L. Bortz, M. D., *President,*  
American Medical Association.

ADDRESS MADE AT BLUE CROSS AND  
BLUE SHIELD DINNER BY  
DR. PAUL R. HAWLEY

Hotel Statler, January 10, 1948,  
South American Room

I have accepted this position solely because it offers an exceptional opportunity to contribute to the improvement of the medical care of our people. From a financial point of view it is far from being the most attractive position offered me since my resignation from the Veterans Administration.

I am not at all sure that I can measure up to this challenge. But what I lack in ability I shall try earnestly to make up in enthusiasm and devotion to this task.

I have been told by so-called experts that privately operated prepaid health service can never be successful in this country—that the costs of the "fee for service" type of operation are prohibitive, and that prepayment for medical care can be placed on a sound actuarial basis only through the operation of clinics staffed by salaried physicians. This I do not believe; but, if it should prove to be true, my position would be that it is the type of operation that must be changed rather than the quality of medical care offered to subscribers. I say this with confidence because the leaders of these two organizations have impressed me with their complete sincerity of purpose. They have fully convinced me that they are committed to providing a real public service. They would never have considered me for this position had I held any different views, nor would I have accepted the position upon any other conditions.

I have further been told by so-called experts that this undertaking is too gigantic for a private, voluntary agency, and that only the Government is in a position to make it successful. I would have no quarrel with this point of view except that it is invariably coupled with the provision that, to make it successful, the Government would have to control medical practice. Nor would I object to the Government control of medicine if this would elevate the standard

of medical practice in this country. But I have seen Government medicine in operation in other countries, and I *know* what Government control does to medicine. I want no part of it for our people.

Recently I was taken to task by a well-known columnist for my convictions upon this subject. He said that, in elevating the standards of medical practice in veterans' hospitals, I had myself proved the case for Government medicine. But he missed the critical point—the fact that the principal reason for poor medical practice in veterans' hospitals was that it was done by a full-time, salaried staff, isolated from the rest of American medicine; and that the principal reason for the improvement of the past two years is that we brought into our veterans' hospitals, as consultants and part-time physicians, the better medical men of the country, who are engaged in private practice.

Blue Cross and Blue Shield have only one objective—that of offering the best in prepaid health service at the lowest possible cost. These organizations have been operated for the benefit of the patient—not for the benefit of the doctor or the hospital. And, so long as I am in any way connected with these organizations, there will be no deviation from this fixed policy.

ARIZONA BLUE CROSS AND  
BLUE SHIELD

Enrollment in Arizona's Blue Cross Plan totaled 68,723 members at the end of 1947, an increase of 84 per cent over the enrollment on December 31, 1946, according to the annual report presented to the board of directors on February 15, by L. Donald Lau, Executive Director.

Case records show, Lau reported, that Arizona Blue Cross paid to hospitals during 1947, a total of \$337,974.14 for 5,922 cases representing 38,092 patient days. Payments to hospitals amounted to 81.2 per cent of gross income.

The report, which covered the third full year of Arizona Blue Cross operation, revealed that of the sum paid to hospitals, \$313,296.17 went to the sixteen member hospitals in Arizona for 5,342 cases representing 33,731 patient days. In addition to Blue Cross payments, subscribers paid an additional \$60,257.64, making a total of \$373,553.81 or \$11.07 per patient day (including out-patients) received by member hospitals for services rendered to Blue Cross member patients.

Obstetrical cases totaled 13.9 per cent and out-patient cases amounted to 14.55 per cent of all cases in member hospitals.

Payments to non-member hospitals during



1947 totaled \$24,678.24 for 580 cases representing 4,361 patient days.

The 1947 figures indicate an increase over 1946 of 170.4 per cent in payments to hospitals. Cases increased 132.5 per cent and patient days 111.3 per cent while enrollment increased 84 per cent over 1946. The high rate of increase in hospital payments is primarily explained by two successive increases in the Blue Cross per diem payments to hospitals during 1947. The increase in number of cases was expected since it has been demonstrated by national experience that subscriber utilization increases after the second year of Blue Cross membership.

The average length of stay per case in member hospitals was 6.31 days and in non-member hospitals 7.52 days.

Since its inception in Arizona, Blue Cross has paid to hospitals \$503,014.03 for 9,368 cases representing 62,707 patient days. 1,035 obstetrical cases are included in these figures.

During the last three months of 1947, 132 hospital admissions were rejected out of 1622 received. Percentage rejected was 8.14 per cent.

Three general hospitals entered into participation agreements during 1947, bringing to sixteen the total number of Member hospitals of the Arizona Plan.

The new Member Hospitals were Pinal General at Florence, whose contract was signed during February; Mohave General at Kingman, whose participation began during April; and Yuma General, a member hospital since August.

The inclusion of these hospitals is significant, because it extends Blue Cross service into areas where previously subscribers could receive only non-member benefits unless they left their own communities to obtain hospital care.

As a result of the general inflationary trend in the national economy, Blue Cross in the year 1947 was faced with the problem of maintaining maximum services to subscribers without a drastic increase in membership dues, and at the same time augmenting payments to member hospitals to offset the rising cost of operations. Beginning 1947 another increase in per diem payments to Member Hospitals was made.

The schedule adopted as of January 1, 1947, was a graduated scale, taking into account the relatively high cost of the first few days of hospitalization as compared to the convalescent days in longer hospital stays.

In addition to this increase, a special adjustment in the amount of \$10,305.41 was prorated among all member hospitals at the rate of \$1,345 per patient day for the period January 1 to May 1, 1947.

On August 1, 1947, a new schedule of subscriber dues went into effect, representing an increase of approximately 17 per cent.

At the same time, per diem payments to Member Hospitals were again increased on the basis of full hospital costs plus depreciation.

Plan growth during 1947 made possible the inauguration of a full time hospital case department. This department, composing two employees and supervisor, was assigned the responsibility for carrying out policies regarding our relations with the hospitals.

Procedures were rewritten, operations were charged, case records were converted to an I.B.M. basis, a rejected case register initiated and a concentrated effort was made to improve hospital and subscriber relations by prompt handling and follow up of all cases.

The Case Department initiated an "opinion Poll" of hospitalized subscribers to determine the extent of the community service rendered and what the subscriber thinks about Blue Cross. (See Chart I).

Progressive planning for the coming year include the publication of a periodic newsletter and visits to the Blue Cross offices by key hospital personnel.

Enrollment growth during the year 1947 continued to show a steady and healthy increase. There were no spectacular or spotty gains. Special enrollment campaigns were conducted in Winslow, Kingman and Yuma. These were held coincident with the inclusion of the hospitals in those areas as Member Hospitals. Immediate results of these campaigns were not great since efforts were more of a missionary nature. However, considerable interest was generated as shown by an increase in inquiries and actual enrollment from these areas.

During the year 1947, several large groups were enrolled. Included among these were such firms as Reynolds Metals, Diamonds Boston Store, Dorris-Heyman, Palmer Manufacturing Company, Bagdad Copper Company, Metropolitan Bus Lines, Goodyear Wingfoot Homes, Inc., and the Cudahy Packing Company.

Community enrollment in Arizona Blue Cross is in its infancy and little specific data can be

offered at this time. In April 1947, the city of Wickenburg, Arizona was enrolled on a community wide basis. Excellent cooperation was received from the eleven civic and religious organizations who sponsored the Plan. Solicitation of subscribers was undertaken by fifty-five volunteer workers from these organizations and the results exceeded expectations. Approximately 75 per cent of the residents of Wickenburg were enrolled and during a one day enrollment campaign on Wickenburg Hospital Day, October 22, 1947, forty-four additional applications were received.

The latest published figures (October 1947) show an estimated state population of 635,000. Based on this figure we have enrolled 11 per cent of our total population or approximately one out of every nine residents of the state. This compares very favorably with the national average of one out of every five persons, since the latter has been built up over a period of sixteen years as against three years of operation by Arizona's Plan.

The Blue Shield Surgical and Obstetrical Plan was launched November 1, 1947 and was offered to eligible groups beginning November 6, 1947. Since there were only two effective dates possible in 1947—December 1st and December 15th, enrollment was naturally limited. Nevertheless, during the twenty-four day period from November 6th to November 30, 1947, 1,514 participants were enrolled, billed and paid their dues.

The only major difficulty encountered to date in the sale of Blue Shield is a general misunderstanding of the income limitations. The impression seems to be that anyone earning in excess of these limitations is not eligible to enroll. Letters were sent to all Blue Cross Groups clarifying this point and the situation has been somewhat improved.

The inflation experienced during 1947 had a decided effect on the financial status, but we made progress and our position remains sound.

A percentage comparison based on income for our three years' operation is as follows:

	1945	1946	1947
Income.....	\$83,610.94	\$203,286.99	\$449,310.82
Payments to Hospitals .....	54.1%	61.5%	81.2%
Operating Expense .....	27.0%	20.9%	17.3%
Added to Reserves .....	18.9%	17.6%	1.5%
*Assets .....	\$40,307.70	\$108,341.40	\$159,203.24

(\*Assets are shown in actual dollars and cents.)

As part of the pattern of growth of Arizona Blue Cross—and in anticipation of the establishment of Blue Shield—a definite program of public relations and public education was inaugurated in March 1947.

The overall public relations program has a three-fold purpose: (1) to promote and maintain intelligent public understanding of the Blue Cross and Blue Shield Plans and their relation to the hospital and medical fields, (2) to maintain good working relations—including the free exchange of experiences and ideas with other Blue Cross and Blue Shield Plans and (3) to assist in establishing and maintaining good relations within the Blue Cross and Blue Shield Staff.

Our present staff of twenty-six employees represents an increase of 53 per cent over 1946. The personnel increase was 31 per cent less than the increase in enrollment and indicates that we are encountering the law of diminishing costs. During 1947, our entire staff was reorganized and a closely integrated system of departmental operations was instituted. Ned F. Parish was promoted to Assistant Director and G. O. Bengtson became Comptroller. Due to continued growth, four additional offices were added to the previous six, giving the Plan a total floor space of 1800 square feet, which at present is inadequate. Furniture and equipment purchases have been held to a minimum due to increased costs.

During 1947, the increased volume with its attendant problems necessitated greater demands than ever before on the time and services of the members of the Board. The Executive Director contacted many of them personally and all of them by mail and received the utmost cooperation. During 1947 Medical and Hospital Committees were appointed and these two committees, together with the Executive Committee, labored long and well. The willingness and cooperation of the Board members was, perhaps, the greatest single factor in providing one out of every nine persons in the State of Arizona with the means of protecting themselves against

the costs of unexpected hospitalization. Their contribution of time and effort, without remuneration, to the welfare of the community is in the best American tradition.

The Blue Shield Plan for surgical and obstetrical care began actual operations as of November 15, 1947. By means of a duly executed Operating Agreement Arizona Blue Cross provides the administrative facilities for Blue Shield. The Operating Agreement makes provisions whereby Blue Shield has reimbursed Blue Cross

for the organizational expenses and contributes its share of operating expenses on a prorated basis.

The joint administration of Blue Cross - Blue Shield provides mutual advantages. Blue Shield receives the benefit of established administrative machinery with corresponding low operating cost and Blue Cross is enabled to fulfill the public's growing demand of a more comprehensive health plan in "one package."

### CHART I — HOSPITALIZATION QUESTIONNAIRE

(Questions 1 through 5 for statistical purposes only.)

	Yes	No	No reply
1. Would you have gone to the hospital if you had not been a Blue Cross subscriber?	96%	4%	
2. Were you able to enjoy better accommodations because you were covered by Blue Cross?	68%	29%	3%
3. If you had not been a subscriber would you have been forced to seek a loan in order to pay your hospital bill? (Do not answer this question unless you so desire.)	32%	53%	15%
4. Because Blue Cross may have relieved you of financial worry, do you believe it contributed to a more rapid convalescence?	74%	16%	10%
5. Did the help of Blue Cross in payment of your hospital bill make it easier for you to pay your physician's charges?	92%	2%	6%
6. Where did you first learn about Blue Cross?			
	Place of employment		79%
	Newspaper or magazine		8%
	Friend or neighbor		15%
	Other		5%
	(7% checked more than one)		
7. General comments, or suggestions for the improvement of the operation of the Blue Cross Plan:			
	56%	Made comments	
	12%	Regarding plan to cover doctor's bills	
	42%	Favorable in nature	
8. You may use my name. Yes 79% No 10%		No reply 11%	

### CHART II — BALANCE SHEET—As at December 31, 1947

A S S E T S			
Cash on Hand and in Banks			\$ 69,698.01
Receivables			2,647.13
U. S. Government Bonds:			
Deposited with Treasurer, State of Arizona	\$10,000.00		
Deposited with Valley National Bank, Phoenix, Arizona	76,130.00		86,130.00
Furniture and Equipment:			
Cost	7,784.52		
Less Reserve for Depreciation	1,136.30		6,648.22
Deposit with State Industrial Commission			60.00
Prepaid Rent			668.10
Total Assets			\$165,851.46
L I A B I L I T I E S   A N D   R E S E R V E S			
Hospital Accounts Payable:			
Claims Received	\$27,668.93		
Reserve for Claims in Transit	1,301.54		\$ 28,970.47
Accrued Liabilities			247.06
Unearned Subscriber Payments			69,331.69
Total Liabilities			98,549.22
Reserves:			
Legally Required Reserve	\$10,000.00		
Contingency Reserve	13,185.53		
Surplus Reserve	44,116.71		
Total Reserves			67,302.24
Total Liabilities and Reserves			\$165,851.46

Dr. Lloyd D. Swasey and Charles D. McCarty, assistant attorney general, both of Phoenix, were elected to the Board of Directors of Arizona's Blue Cross Plan at the annual meeting on February 15, it was announced by L. Donald Lau, executive director. Both were elected for full three-year terms.

Andrew Gibbons of Yuma was elected to serve out the term of the late M. J. Hackett, also of Yuma.

Re-elected for full terms on the Board of Directors were Robert A. McFarlane, Phoenix; Sister Mary Eucharist, St. Joseph's Hospital,

Phoenix; H. C. Henrie, Bisbee; Dr. Harold Kohl, Tucson, and Andrew Martin, Tucson.

Other directors are: Dr. Florence B. Yount, Prescott; A. M. Crawford of Prescott Community Hospital; Dr. Frank J. Milloy, Phoenix; Dr. W. Roy Hewitt, Tucson; J. O. Sexson, Good Samaritan Hospital, Phoenix; Emmett McLoughlin, OFM, St. Monica's Hospital, Phoenix; Dr. Jesse D. Hamer, Phoenix; William H. Passey, Mesa, and Clyde W. Fox, Tucson Medical Center.

The full roster of officers was re-elected. The officers are: Charles Korrick, president; Dr. Preston Brown, vice president; Glenn Taylor, treasurer, and William J. Wasson, secretary.

## Schedule of Blue Shield Benefits

The amounts listed in this Schedule of Benefits are set up for payment of physicians providing service to Blue Shield members as provided in the Subscription Agreement, in which service in full is provided for those within the income limitations or indemnity benefits to those of higher incomes. They do not represent average fees nor do they constitute an established fee schedule. Fees for all services are not listed. They will be determined by experience. All fees are subject to change as experience dictates.

All fees for surgery shall include the usual after care.

### HEAD:

Simple trephine .....	100.00
Ventricular puncture for encephalography .....	75.00
Epidural lesions .....	100.00
Subdural lesions (hematoma or abscess) .....	150.00
Any operation involving invasion of brain structure .....	200.00
Brain tumors and elective brain surgery by special arrangement.	

### THORAX:

Excision of breast tumor .....	50.00
Excision of breast .....	100.00
Excision of breast with axillary glands .....	150.00
Resection of rib .....	75.00
Thoroscoplasty, per stage (not to exceed \$200.00) .....	75.00
Lobectomies and pneumonectomy by special arrangement.	

### ABDOMEN:

Exploratory laparotomy .....	100.00
Appendectomy .....	100.00
Bowel Resection .....	150.00
Cholecystectomy .....	150.00
Cholecystotomy .....	150.00
Hernia, radical operation and examinations .....	100.00
(Same for inguinal, femoral, umbilical or ventral)	
Bi-lateral hernia, radical operation and examinations .....	150.00
Gastro-enterostomies .....	150.00
Partial Gastrectomies .....	150.00
Splenectomy .....	200.00

### SPINE:

Spinal fusion .....	200.00
Laminectomy, to include casts .....	175.00

Extrusion of intervertebral disc, including laminectomy and spinal fusion, to include casts .....

Laminectomy, with spinal fusion, to include casts .....	250.00
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### EXTREMITIES:

#### Amputations:

Finger or toe .....	30.00
Arm or forearm .....	75.00
Shoulder disarticulation .....	100.00
Leg (at or below knee) .....	75.00
Thigh .....	100.00
Hip disarticulation .....	175.00

In case of more than one amputation of the same member, the fee shall be the major one, plus an additional 30 per cent; if of other members, an additional 50 per cent.

Cuts, contusion, etc., of other members will be considered a part of major injury, and treatment thereof shall not be charged for separately.

### GENITO-URINARY:

Nephrectomy .....	200.00
Nephrotomy .....	175.00
Nephropexy .....	125.00
External urethrotomy .....	100.00
Repair of ruptured urethra .....	100.00
Perirenal abscess .....	100.00
Prostatectomy .....	175.00
Cystotomy .....	100.00
Amputation of penis .....	100.00
Orchidectomy .....	75.00
Hydrocele, radical operation .....	75.00
Varicocele, radical operation .....	50.00

### SKIN GRAFT:

#### Thiersch or Riverdin:

Small (approximately 1 to 3 sq. in.) .....	25.00
Medium (approximately 4 to 25 sq. in.) .....	50.00
Large (over 25 sq. in.) .....	100.00
Full thickness: Twice the above fee	
Tube pedicle by special arrangement	

### BURSAE:

Excision of subdeltoid bursa .....	75.00
Excision of prepatella bursa .....	50.00
Excision of olecranon bursa .....	35.00
Removal of ganglion .....	35.00
Excision of nail, finger or toe .....	5.00

### ARTHROTOMIES AND RESECTIONS:

Corpal, tarsal, wrist or ankle .....	75.00
Elbow, shoulder or hip .....	175.00
Subtalar arthrodesis .....	150.00
Removal of semilunar cartilage .....	150.00



<b>MISCELLANEOUS</b>			
Fistula in ano .....	35.00	Sternum .....	25.00
Excision of pilonidal cyst.....	75.00	(if cartilage injury involved, special rates to apply)	
Excision of ischio-rectal abscess.....	75.00	<b>Spine:</b>	
Hemorrhoidectomy .....	75.00	Vertebral body with definite compression of body or neural arch.....	100.00
<b>GENERAL SURGICAL PROCEDURE</b>		Compression or dislocation with cord injury .....	150.00
<b>WOUND REPAIR:</b>		Transverse, spinous or articular process, one or more .....	50.00
Simple Repair .....	10.00	Pelvis .....	75.00
<b>TENDON REPAIR:</b>		Sacrum .....	50.00
When severed, first .....	35.00	Coccyx .....	50.00
Each additional .....	15.00	<b>Upper Extremities:</b>	
<b>NERVE REPAIR:</b>		Finger, simple reduction and immobilization .....	15.00
When severed, first .....	50.00	Finger, with displacement requiring reduction .....	25.00
Each additional .....	25.00	With complicating lacerations of the soft tissues .....	30.00
(When there are multiple nerve and tendon injuries in the same wound, the fee for the first nerve repair shall prevail, and additional nerve and tendon repairs shall be at the lesser fee. In such cases no extra charge shall be made for muscle, fascia or skin repair of this wound.)		(For each additional finger add 30% of the specified fee)	
<b>INCISION AND DRAINAGE:</b>		Metacarpal, without displacement .....	20.00
Incision for superficial abscess, as furuncle or boil .....	5.00	Metacarpal, with displacement .....	30.00
Incision for deep abscess, requiring general anesthetic .....	25.00	(For each additional metacarpal add 30% of the specified fee)	
Paronychia .....	5.00	Carpal, closed .....	25.00
<b>FOREIGN BODIES:</b>		Carpal, open .....	75.00
Foreign body extraction, subcutaneous with anesthetic .....	10.00	Radius or ulna .....	50.00
Foreign body extraction, deep .....	25.00	Radius and ulna shaft .....	75.00
Note: above extractions do not include removal of foreign body from eye or orbit or body cavities.		Bone graft, forearm .....	175.00
<b>MANIPULATIONS, ASPIRATIONS AND INJECTIONS</b>		Colles's fracture .....	50.00
<b>MANIPULATIONS:</b>		Humerus, closed .....	75.00
Manipulation of the spine under anesthetic .....	25.00	Humerus, open .....	150.00
Manipulation of large joints, such as ankle, knee, hip, wrist, elbow or shoulder .....	15.00	Bone graft, humerus .....	200.00
All other manipulations under anesthetic .....	10.00	Scapula .....	50.00
<b>ASPIRATION:</b>		Clavicle .....	50.00
Elbow, knee or ankle joint.....	15.00	<b>Lower Extremities:</b>	
Bursa, subdeltoid or Subacromial, first.....	10.00	Great toe, simple reduction and immobilization .....	15.00
Subsequent .....	5.00	With displacement requiring reduction .....	25.00
Bursa, olecranon or prepatella, first.....	5.00	With complicating lacerations of the soft tissue .....	30.00
Subsequent .....	3.00	Other toes .....	10.00
Thorax, diagnostic .....	10.00	With complicating lacerations of the soft tissues .....	25.00
Therapeutic .....	20.00	(For each additional toe add 30% to the specified fee)	
Pericardium .....	25.00	Metatarsal, without displacement .....	20.00
Abdomen .....	15.00	Metatarsal, with displacement .....	30.00
Hydrocele .....	10.00	(For each additional metatarsal add 30% of the specified fee)	
<b>Injection:</b>		Astragalus .....	35.00
Injection of brusa, same as for aspiration		Os calcis, without displacement .....	40.00
Paravertebral, sacral or intraspinal injections, first .....	10.00	Os calcis, with displacement requiring fraction .....	75.00
Subsequent .....	5.00	Other tarsal bones .....	25.00
<b>FRACTURES:</b>		Tibia .....	75.00
<b>Skull:</b>		Bone graft, tibia .....	175.00
Without depression .....	50.00	Fibula .....	25.00
Operation without the dura .....	100.00	Tibia and fibula, shaft .....	100.00
Operation within the dura .....	150.00	Potts fracture .....	75.00
<b>Facial:</b>		Internal malleolus .....	35.00
Maxilla, malar or zygoma, open surgery...	75.00	Patella, closed .....	50.00
Mandible, uni-lateral .....	50.00	Patella, open .....	100.00
Mandible, bi-lateral .....	100.00	Femur .....	100.00
Nasal .....	25.00	Bone graft, femur .....	175.00
<b>Thorax:</b>		When skeletal traction is required, add 25% of the usual fee.	
Ribs, one .....	15.00	For open reduction add 50% of the usual fee, except as otherwise specified.	
Each additional, add 50%-maximum.....	30.00	Chip fractures incomplete fractures, or fractures with no significant change in position or alignment, and requiring only immobilization, shall be charged at 50% of the usual fee, except as otherwise specified.	
(if lung injury involved, special rates to apply)		In all cases the condition of the fracture is to	



be shown by x-ray both before and after reduction.

When closed reduction is unsuccessful and skeletal traction or open reduction is required, the total charge, when all procedures are carried out by the same surgeon, shall be 75% of the combined fees.

#### DISLOCATIONS:

Mandible .....	15.00
Spine, follow fracture fees.	
Finger .....	10.00
Wrist .....	25.00
Elbow .....	35.00
Shoulder, primary .....	40.00
Shoulder, recurrent .....	10.00
Acromioclavicular .....	25.00
Sternoclavicular .....	25.00
Toe .....	10.00
Ankle .....	40.00
Knee .....	50.00
Patella .....	25.00
Hip .....	75.00

In case of fracture-dislocation, the major fee will apply.

#### CASTS:

Wrist (elbow to hand) .....	5.00
Upper extremity (shoulder to hand) .....	10.00
Body spica, one shoulder .....	15.00
Body spica, including both shoulders .....	20.00
Ankles (knee to toes) .....	5.00
Lower extremity (hip to toes) .....	10.00
For walking iron, add. ....	5.00
Unilateral spica, including hip .....	15.00
Spica, including both hips .....	20.00
Trunk cast .....	15.00
Trunk cast, including neck and head .....	25.00

The above fees are to be in addition to the actual cost of materials used, and apply to casts subsequent to the first.

When supplies are furnished by the attending physician, see hospital schedule for fees for materials.

#### EYE SPECIALTY:

Removal of foreign body, unembedded .....	3.00
Removal of foreign body embedded in cornea or sclera .....	5.00
Removal of intra-ocular foreign body .....	100.00
Iridectomy .....	75.00
Excision of prolapsed iris .....	60.00
Cataract extraction .....	150.00
Cataract dissection (needling) .....	35.00
Enucleation .....	75.00
Evisceration .....	100.00
Primary suture of lid wound .....	15.00
Chalazion .....	10.00
Operation for ectropion, traumatic .....	50.00
Operation for entropion, traumatic .....	50.00
Dacryocystectomy .....	75.00
Pterygium .....	35.00
Conjunctivoplasty .....	35.00

#### NOSE, EAR AND THROAT:

##### Nose:

Removal of foreign body .....	5.00
Epistaxis with electro coagulation .....	10.00
Submucous resection .....	75.00
Turbinectomy .....	50.00
Antrotomy:	
Puncture with irrigation .....	10.00
Window .....	50.00
Subsequent .....	5.00

##### Ear:

Removal of foreign body from external canal .....	5.00
Primary repair of auricle involving cartilage .....	15.00
Myringotomy .....	5.00

#### Mastoidectomy:

Simple .....	100.00
Radical .....	150.00
Catheterization of eustachian tube .....	5.00
Bi-lateral .....	7.50

#### Throat:

Removal of foreign body from throat .....	5.00
Removal of foreign body from nasal pharynx .....	10.00
Tonsillectomy, including local anesthetic .....	35.00
Tracheotomy .....	75.00
Intubation .....	25.00

#### ANESTHETIST:

Either, minimum fee for one hour or less .....	12.00
For each additional 15 minutes .....	2.50
Gas, minimum fee for one hour or less .....	12.00
For each additional 15 minutes .....	3.00
Intravenous, for one hour or less .....	12.00
For each additional 15 minutes .....	3.00
Spinal and rectal—Same as for intravenous .....	
Any general anesthetic for minor operations, 15 minutes or less .....	5.00
Local anesthetic to be considered part of the operative fee.	

The period of time to be measured from the beginning of induction of anesthetic to recorded end of operation.

#### SPECIAL DIAGNOSTIC AND THERAPEUTIC PROCEDURE

Esophagoscopy .....	50.00
Gastrosocopy .....	50.00
Gastric Lavage .....	10.00
Laryngoscopy .....	25.00
Bronchoscopy .....	50.00
Spinal puncture .....	10.00
Spinal puncture with manometric determination .....	15.00
Combined spinal puncture .....	20.00
Cisternal puncture .....	25.00
Cystoscopy, including catheterization: Without x-ray .....	25.00

#### GYNECOLOGY:

Hysterectomy .....	150.00
Dilation and curettage .....	50.00
Perineorrhaphy .....	100.00
Bartholin Gland, incision .....	10.00
Bartholin Gland, excision .....	25.00
Conization of cervix .....	25.00

#### OBSTETRICS:

Normal Delivery (includes prenatal and postnatal care) .....	100.00
Caesarean section .....	150.00

#### CONSULTATION

The services of a consultant shall be made available to a subscriber upon certification of the need therefor by subscriber's participating physician and approval by the Service.

In the event that more than one surgical operation is performed at the same time, payment will be made only for the operation for which the largest amount is allowed in the Schedule of Benefits.

For any operation or procedure not listed in this schedule, Blue Shield reserves the right, in its sole discretion, to determine the amount of service credit, if any, to be allowed.

For any Surgical or Obstetrical Care for which no benefits are listed on the foregoing schedule, or in the more complete list which is available for inspection in the offices of Arizona Blue Shield, the SERVICE reserves the right in its sole discretion, to determine the amount of service credit, if any, to be allowed.

## Arizona Medical Problems

### CONSULTATION AND CASE ANALYSIS

**ARIZONA MEDICINE** again presents an unsolved and difficult case from the practice of Arizona physicians, with the Case-Analysis and comments of a specially-chosen and nationally-known Consultant.

Any physician who has an undiagnosed case which has defied other methods of solution may send it for consideration. The case should be completely worked up, but an editor will help compose the report. Whenever the need for an answer is urgent, the Consultant's reply will be sent direct to the submitting physician, before publication.

Please send communications and data to Dr. W. H. Oatway, Jr., 123 S. Stone Avenue, Tucson, Arizona, or care of The Editor, Arizona Medicine.

(The CONSULTANT for this case is Dr. Julius Lane Wilson, Professor of Clinical Medicine at Tulane University Medical School, Medical Director of the Ochsner Clinic in New Orleans, member of the American Board of Internal Medicine, and recent president of the American Trudeau Society. He is the author of several reports on diseases of the chest, including an analysis of emphysema.)

#### CASE NUMBER VI

The current case was sent in for analysis because, in the words of the physician, "I have had seven similar cases in my care during the past year or so, and most of them do not regularly do well. I have begun to wonder if I am missing something in the diagnosis or treatment of the condition."

The patient is a white male, 57 years of age. He was first seen in the Spring of 1945, after he had been a winter visitor in Arizona for five years and a resident for two years. He had come from the Pacific northwest, but had worked in many parts of the country as a field geologist; in recent years he had been restricted to the lighter tasks of a concessionaire, and for the past eight months he had not worked at all.

His chief complaints were "attacks of asthma at night," and similar attacks which followed exertion during the day. The attacks had started about eight months before, after he had worked too hard in the early summer. He volunteered that he had 'chronic asthma with heart trouble,' and he had 'gone through the mill' in efforts to arrive at a satisfactory diagnosis and treatment. During the previous year he had tried a mountain climate, which made his dyspnea worse, and a location on the coast, which was too damp.

The nocturnal attacks usually occurred after about four hours of sleep, wakened him, and consisted of dyspnea, wheezing, and coughing. His routine of treatment consisted of the use of an adrenalin vaporizer, a drink of whiskey, and a cigarette. After coughing up a small amount of mucus, he was relieved and could return to sleep. During the previous five years he had tried

ephedrine (it caused frequency of urination); aminophyllin by mouth (no effect); phenobarbital at night (helped a lot); vitamin B injections (helped last year, no good this year); intravenous calcium (maybe it helped a little); "hypos" of adrenalin (not convenient); and half a dozen varieties of sprays and inhalers. He was using none of these when first seen.

The patient had noted that several things were irritating to his lungs,—smoke and gases; cold air; dampness and fog; exercise; lying on his back at night; dust; and pollens. The pollens which produced hay-fever were ragweed, cottonweed, zinnias, certain unidentified trees, and possibly bermuda grass. "Colds" had not been frequent, but always increased the asthma, turning his scanty, clear sputum purulent, and accentuating a mild nasal catarrh. He had removed all rugs from his house, given away his dog, and had no other pets. He had had complete skin tests to all common allergens except bacteria and fungi; his reactions were 3 or 4 plus to horse and cat dander, canary and pigeon feathers, rabbit fur, tobacco, house dust, henna, and flax-seed, but negative to orris. He also reacted strongly to twenty common foods, including wheat and milk, but not to egg or beef.

**Symptoms by systems**—There were no eye, ear, nose or throat complaints. The only heart symptom was palpitation during attacks. His appetite, digestion, and elimination were good, and he felt better and had less asthma while on a simple exclusion diet. There were symptoms of a mild prostatic obstruction, present for several years, but his libido and potency had disappeared only four months ago. His strength had decreased in the past year, but his weight had increased 10 pounds to 170. In general he had been emotionally stable, had had no vascular symptoms except "a tension in the fingers" and a vertigo on stooping, and there had been no headaches.

He had had scarlet fever and diphtheria as a child, but not anything to suggest rheumatic fever. He had had migraine, hives, or other allergic conditions. He had had a G. C. infection as a youth, but his blood serology had always been negative. There was no family history of allergy or other ailments. The patient smoked a pack of cigarettes a day, drank a half pint of whiskey, and noted no effect from these except mental discomfort if he did without.

**Physical examination**—The skin was deeply tanned, but a low-grade general cyanosis could be noted. There was a mild injection of the conjunctival, nose, and throat membranes. The lower teeth were carious, the uppers replaced by a denture. The B/P was 155/95, and the venous pressure (indirect) was about 15 cm. of water. The chest was emphysematous in shape and mobility; no rales or rhonchi could be heard. The pulse rate was 76-80, and all of the heart sounds were almost inaudible. The abdomen was slightly obese, and the liver was slightly low to percussion. There was no edema. The prostate was generally, moderately, enlarged. The patient was slightly dyspneic during the examination.

Fluoroscopy confirmed the shape of the chest, low and poorly mobile diaphragm, and "thin lungs." The heart position was normal; the left ventricular area seemed slightly prominent, and the aortic knob was definitely prominent. A urinalysis was normal.

The tentative impressions were chronic bronchial asthma (extrinsic), chronic pulmonary emphysema, chronic hypoxemia, possible mild hypertensive heart disease with aortic sclerosis, chronic prostatitis, and dental caries. It was decided to keep him at rest, and to observe him through a series of trials of various drugs until an ideal routine could be established.

**Progress**—Within two weeks, and before studies were under way, he caught a cold which developed into a bronchitis. Orthopnea was present, there was a mild pitting edema of his ankles, but there were no abnormal lung signs. Sulfadiazine was used for the bronchitis, sedatives and expectorants for the cough, a nebulizer and ephedrine for the asthma, and digitalis for cardiac support.

The bronchitis cleared after a week of treatment, and several drugs were then omitted. Digitalis caused only peripheral scotomata, but the edema remained the same. Moderate sized doses of ammonium chloride were given, and in three days the edema began to subside.

During the next year the condition changed only in minor degrees; there were recurrent attacks of asthma, and evidences of decompensation. Numerous drugs and routines were used with varying effect. The patient and his wife learned the significance of symptoms and signs, and how to decide on the need for different or emergency treatment.

In general the asthma and other lung symptoms were the same although they were somewhat modified by the weather. The adrenalin nebulizer was used for "tightness" or attacks; intravenous aminophyllin was used if the attack persisted. Ephedrine compounds, intravenous Vitamin B and sodium iodide, "ethylene disulfonate," etc., were of little or no value. "Theocalcin," given for the heart condition, eased the dyspnea as well.

During the first year the cardiac findings were not much changed. The fluoroscope showed the aorta to be moderately prominent but the heart size probably was not abnormal. The pulse was usually 80 to 90. The B/P varied between 128 to 145/80 to 85, so that hypertension was not a factor. It did not seem possible to decide whether the right or left heart was responsible for failure, whether he had a cardiac asthma, or how important the allergic aspect and the emphysema were. The edema was present more than half of the time. Fluid intake and output were measured whenever the edema recurred. Basic supportive treatment included digitalis (or a lanatoside substitute), caffeine sodium benzoate (by mouth) for "weak-spells," aminophyllin or theocalcin tablets. This was augmented by other measures, — ammonium chloride alone, or followed when necessary by intravenous theophylline-salyrgan. On one occasion the edema abruptly increased within a few hours after a salt-water purge. On one occasion he developed a fibrillation with a pulse deficit which lasted 24 hours. An electrocardiogram several days later showed digitalization, possible coronary sclerosis and myocardial degeneration, but no ventricular predominance.

After a year and a half the patient's course slowly started downhill. He took a vacation from therapy for several weeks, became grossly edematous and improved to his previous level only after a hospitalization. In the past few months he has become thinner, his exhaustion spells are more severe, and his mental function becomes hazy and somnolent at times. He has required another period in the hospital, with a more strict routine than at home, to keep him near com-

pensation. The cyanosis is greater, and the neck veins and venules on the upper chest are prominent. Attempts to control his salt intake have had no effect except to ruin the appetite. The edema often extends to the upper extremities. The urine is clear; there is a mild polycythemia, and the heart and breath sounds are still very faint and clear.

### QUESTIONS

1. What do you consider to be the major diagnoses?
2. How do you apportion the responsibility for the cardiac failure?
3. Is there a more effective therapy for cor pulmonale?
4. Is digitalis of more or less value than in most decompensations?

M. D., Tucson

### CONSULTANT'S REPLY

The problem presented by this patient arises in practice with increasing frequency. Since pulmonary emphysema is essentially a concomitant of the aging process, the survival of a larger segment of the population into the sixth and seventh decades of life is sufficient to explain this fact. In the majority of these cases pulmonary emphysema develops without any definite history of occupational strain, residence in high altitudes, or repeated attacks of bronchial asthma, which might reasonably explain the overdilatation of the lungs.

The patient under consideration is an individual with allergic responses of the respiratory type to many inhaled dusts and ingested foods. We are not informed as to how many years he had suffered from hay fever and bronchial asthma before reaching the age of 57. The family and past histories are not contributory. Attacks of dyspnea at night and after exertion have been noticed only for eight months before he is first seen and we must assume that a change in symptoms at that time marked the onset of the present illness as distinct from the previous allergic episodes. The trial of multiple remedies and of various climatic refuges is characteristic of the asthmatic victim, as is also the formula of treatment for attacks which he has worked out for himself. The nocturnal occurrence of dyspnea in itself suggests that there is an element of cardiac insufficiency, although reaction to various allergens might occur at night. The gain of ten pounds in body weight might be fluid in the form of inapparent edema due to beginning cardiac failure, or more likely this

might have been the result of his idleness for eight months, because a physical examination showed abdominal obesity.

The cyanosis and the shape of the thorax are the outstanding physical signs on examination. There is no objective evidence of cardiac decompensation. Hence, the cyanosis is due to the lack of blood oxygenation in the pulmonary parenchyma rather than to poor circulation. This is characteristic of well developed pulmonary emphysema. The absence of rales is evidence against both bronchial asthma and so-called asthmatic bronchitis in an active phase. The tentative impressions as to the diagnosis are logical, although the presence of hypertensive heart disease with aortic sclerosis is an assumption based upon the age of the patient and a prominent aortic knob demonstrated by fluoroscopy. Fluoroscopy has contributed materially to the diagnosis of emphysema by the observation of the diaphragm's low position and poor function, but the determination as to which ventricle of the heart may be hypertrophied is notoriously inaccurate by roentgenologic techniques.

An acute respiratory infection during the first period of study upset the rather delicate balance of his cardiopulmonary reserve with resulting cardiac decompensation as shown by the appearance of orthopnea and demonstrable edema. He was then kept functioning by the greatest care, with measures to get rid of the edema being apparently more helpful than digitalis. The term cardiac asthma only serves to confuse the picture in which the elements are already sufficiently complex.

After eighteen months of this precarious balance, another turning point is reached with gross edema, mental haziness, increased cyanosis and observable distention of the veins of the neck. Even at this stage the physical findings incident to edema, indicate no edema of the pulmonary bases. Here we have the fully developed picture of right-sided cardiac failure, the final scene of the drama. The overdistention and almost total loss of the elasticity of the lungs has resulted in irreversible effects upon the respiration and upon the circulation. The interference with normal passive expiration has too long been compensated for by active expiratory efforts, but the residual air in the lungs has gradually encroached upon the vital capacity until the tidal air is threatened. The over-

distention, at first compensatory in itself, has resulted in a breakdown of alveolar walls until the surface area for exchange of oxygen within the lung has been reduced to the danger point. The arterial blood oxygen has been low enough to produce cyanosis for the past eighteen months. The positive pressure in the alveoli throughout much of the respiratory cycle is sufficient to protect against pulmonary edema when circulatory failure begins. On the other hand, the relative anoxia of the tissues contributes to the production of generalized edema.

The effect of pulmonary emphysema upon the heart is generally assumed to be due to reduction of the pulmonary stream bed, although proof of this is lacking. Certainly many patients with advanced pulmonary tuberculosis die without any evidence of such pressure producing right-sided cardiac hypertrophy. It is possible that other factors due to the overdistention of the lungs by emphysema and the neutral to positive intrathoracic pressures play a major role in causing cardiac hypertrophy and eventual failure. The heart cannot fill with returning blood readily and must work against a tamponade of pulmonary pressures. Finally, the cardiac muscle itself is laboring on a supply of poorly oxygenated blood, muscular insufficiency results and the venous pressure rises, adding hydrodynamic pressure to the formation of tissue edema. The cycle of pulmonary-cardiac breakdown being completed, the end is then in sight.

#### ANSWERS TO QUESTIONS

1. The major diagnoses are chronic pulmonary emphysema, obstructive in type, and cardiac failure (cor pulmonale).

2. The cardiac failure is due almost entirely to the pulmonary emphysema. The age of the patient contributes an element of possible arteriosclerosis of the coronary and systemic arteries which would have been insufficient in itself to cause failure. The history gives no clue to possible rheumatic or syphilitic damage which might have been present.

3. Unless the underlying condition can be treated effectively by improving intrathoracic mechanics and the oxygenation of the blood, there is no hope for more effective therapy for this condition.

4. Digitalis is definitely of much less value in treating decompensation due to cor pulmonale



than in that due to other conditions—so much so, that digitalis is given to patients with de-compensated cor pulmonale only for two reasons: (1) because we cannot be sure that there are not other elements playing a part in the de-

compensation in most of these cases and (2) to do everything possible for the patient in such a desperate situation.

Julius Lane Wilson, M. D.,  
Tulane University Medical School  
New Orleans, La.

## Cancer Current Literature

552. Walsh, Theo. E., Washington University School of Medicine, St. Louis, Mo.

**THE CLASSIFICATION OF CARCINOMA OF THE LARYNX.** *Laryngoscope* 57:414-418 (June 1947).

"A classification of cancer of the larynx is suggested."

"Intrinsic should be reserved for cancer of the true vocal chord only."

"Endolaryngeal cancers are in general surgical conditions with fair prognosis."

"Subglottis cancers may be surgical; their extent is best observed by Roentgenograms."

"Extrinsic or extralaryngeal cancer is usually inoperable and is best treated with xray. The prognosis is not good." Author's Summary

553. Ward, Robertson, University of California, Medical School, San Francisco, California.

**MALIGNANT GOITER: LESSONS TO BE LEARNED FROM A 20 YEAR FOLLOW-UP.** *West. J. Surg., Obst. & Gynec.* 55: 383-388 (July 1947).

Study based upon 179 cases of cancer of the thyroid with the following conclusions:

1. "Conclusions based upon the traditional five year follow-up of cancer are quite inadequate when dealing with malignant goiter."

2. "Problem of malignant goiter is inseparable from the problem of nodular goiter."

3. "Adequate and early surgery is still best prospect for cure. Radio active iodine promises to be effective only in rare instances of a comparatively rare disease."

549. Martin, Charles L. & Wright, Carleton, Dallas, Texas.

**TREATMENT OF CANCER OF THE FACE, MOUTH AND NECK WITH IRRADIATION.** *J.A.M.A.* 134:861-867 (July 5, 1947).

"Cancer of the skin is common in the southwestern states, where it constitutes approximate-

ly 30% of all the malignant lesions treated. The incidence of cancer of the mouth is also high. The absolute three year cure rate in an unselected group of patients with advanced cancer of the face, lip, mouth and cervical nodes treated with irradiation was found to be approximately 25%. The relative three year cure rate in a group of unselected advanced cases was above 40%." Author's Summary.

529. Ryle, John A. & Russell, W. T., Institute of Social Medicine, Oxford, England.

**SOCIAL AND OCCUPATIONAL FACTORS IN THE AETIOLOGY OF CANCER OF THE SKIN.** *Brit. M. J.* 1:873-877 (June 21, 1947).

"The annual number of deaths from cancer of the skin is approximately 1,000 per annum in England and Wales and the mortality in males is about 70% in excess of the females."

The mortality has a definite gradient with social groupings for the wives of workers, but for the males it would seem to have both a social and an occupational relationship and the latter is seemingly the more important."

Author's Summary.

532. Thoma, Kurt H. & Goldman, H. M., Harvard University, Cambridge, Mass.

**CENTRAL MYXOMA OF THE JAW.** *Am. J. Orthodont.* 33: Oral Surg. 532-540 (July 1947).

"The myxoma of the jaw is seemingly a benign tumor as evidenced by a study of 11 cases, four of which are cited in the case reports. The association of this tumor with embedded or missing teeth is striking, especially the case in which the tumor had the appearance of a dentigerous cyst. Since the myxoma, from histologic study is derived from a degeneration of a connective tissue tumor, it is reasonable to suppose that the myxoma of the jaw is in reality an odontogenic fibroma which has undergone myxomatous degeneration." Author's Summary.



## Poliomyelitis Current Literature

262. Finn, S., Korn, R. F., and Bahlke, A. M. (N. Y. State Dept. of Health.)

EXPOSED DENTAL PULP AS A PORTAL OF ENTRY FOR THE VIRUS OF POLIOMYELITIS. *Am. J. Hyg.* 46:177-183 (Sept. 1947).

"The published literature on the subject of dental pulp exposure in poliomyelitis has been critically reviewed. A study conducted in three cities in New York State is presented in which the prevalence of dental pulp exposure in patients with poliomyelitis was compared with that in siblings of these patients. Of 70 patients studied 45.7 per cent showed pulp exposure, while among the 119 siblings of these patients 45.4 per cent showed pulp exposure. Special study of patients with bulbar poliomyelitis failed to show any significant difference in the prevalence of pulp exposure in this group as compared to their siblings. A survey of 773 school children in a community which had recently experienced an extensive epidemic of poliomyelitis revealed that 352 (45.5 per cent) had dental pulp exposure. In this same community, 45.4 per cent of 22 poliomyelitis patients studied had pulp exposure. In the study presented no significant difference was found in the prevalence of dental pulp exposure in persons who acquire clinical poliomyelitis as compared to those in the same households who escape the disease." (Authors' summary)

14 references.

263. Fox, Max J. and Waisman, Harry A. (Marquette Univ. Sch. Med.)

FURTHER OBSERVATIONS ON POLIOMYELITIS IN PREGNANCY. *Am. J. M. Sc.* 214:148-152 (Aug. 1947).

"The total number of recorded instances in which pregnancy complicated poliomyelitis or poliomyelitis complicated pregnancy is well over

175. Data from the 1945 and 1946 epidemics indicate that of 24 married women admitted to the South View Isolation Hospital with a diagnosis of poliomyelitis, 14 were pregnant. The incidence of poliomyelitis appears to be greater in pregnant than in non-pregnant women, though it has not been feasible to confirm our data by statistical methods. One case of hematomyelia is cited which clinically simulated poliomyelitis. Influence of the glandular changes of pregnancy which affect the physiologic balance of the patient and, therefore, susceptibility to poliomyelitis, is offered as a possible explanation for the apparently greater incidence in pregnant women." (Authors' summary)

18 references.

264. Fox, Max J., and Sanders, Donald D. (Marquette Univ. Sch. Med.)

MANAGEMENT OF RESPIRATORY EMBARRASSMENT IN POLIOMYELITIS. *Wisconsin M. J.* 46:885-894 (Sept. 1947).

"The mechanics of respiration and the cough reflex have been reviewed, and the mechanism of the respirator has been stressed. A classification of respiratory embarrassment in poliomyelitis has been presented. The successful therapy of respiratory distress in poliomyelitis is dependent upon the determination of its causes. A mechanical respirator is indicated only if partial or complete paralysis of the muscles of respiration is present. The proper management of other causes of respiratory embarrassment have been given. Illustrative cases have been presented. Divergent opinions as to when a patient with respiratory paralysis should be placed in a respirator and when he should be removed have been expressed. The supplementary treatment of respirator cases has been outlined. The objective and importance of physical therapy have been given." (Authors' summary)

17 references.

## Carrie Tingley Hospital

For Crippled Children  
Hot Springs, New Mexico

### BULBAR FORM OF POLIOMYELITIS

The Minnesota Poliomyelitis Research  
Commission, Minneapolis

The Journal of the American Medical Association, Vol. 135, No. 7, Oct. 18, 1947.

Studies on 183 patients with bulbar involvement during the 1946 epidemic of poliomye-

litis revealed that bulbar poliomyelitis is not a single homogeneous entity. It can be divided into four groups of symptom complexes, each pointing toward involvement of a specific region of the nervous system requiring varying treatment.

Although there is considerable overlapping

between the various categories in individual cases, the following classification is suggested:

1. Bulbar-cranial nerve nuclei group.
2. Bulbar-respiratory center group.
3. Bulbar-circulatory center group.
4. Bulbar-encephalitis group.
5. Combined bulbar-cervical cord group.

The treatment recommended is based on the pathologic physiology observed in the 183 cases. The instances of overlap are recognized, but treatment is discussed for each group separately.

A summary of symptoms and treatment in various type of bulbar poliomyelitis is given in chart form:

#### Bulbar-Cranial Nerve Nuclei Group

##### Symptoms:

1. Difficulty in swallowing
2. Regurgitation of food and fluids through nose (particularly in children)

##### Treatment:

Parenteral feeding; nasal feeding

##### Symptoms:

3. Pooling of secretions in throat (salivation?)
4. Nasal speech; hoarseness; inability to talk

##### Treatment:

Impending obstruction of airway  
Postural drainage; suction; elective tracheotomy

##### Symptoms:

5. Stridor; dyspnea; cyanosis (obstructed airway)

##### Treatment:

Emergency intubation and/or tracheotomy

##### Symptoms:

6. Anxiety and restlessness (hypoxia)

##### Treatment:

Oxygen therapy, tent, mask, etc., humidified

##### Symptoms:

7. Other cranial nerve involvements; ophthalmoplegias; facial palsies

##### Treatment:

No treatment necessary

#### Bulbar-Respiratory Center Group

##### Symptoms:

1. Adequate function of respiratory muscles
2. Adequate airway

##### Treatment:

No treatment necessary

##### Symptoms:

3. Variations in rate and depth of respirations (impending failure; observe carefully)
4. Prolonged intervals between respirations
5. Anxiety, restlessness, increasing pulse rate (hypoxia)

##### Treatment:

Oxygen therapy (elective tracheotomy)

##### Symptoms:

6. Increasing periods of apnea
7. Confusion, delirium, pulmonary congestion (anoxia)
8. Cyanosis

##### Treatment:

Tracheotomy

Respirator

Intensive oxygen therapy with positive pressure, if possible; sedation with extreme caution

#### Bulbar-Circulatory Center Group

##### Symptoms:

1. Dusky red, flushed, florid appearance
2. Rapid (150-200) pulse
3. Irregular, thready pulse
4. Elevated blood pressure; decreased pulse pressure
5. Anxiety; restlessness
6. Shocklike state (failing blood pressure, imperceptible pulse)
7. Cold, clammy, mottled cyanosis
8. Hyperthermia, delirium, coma

##### Treatment:

1. Intensive oxygen therapy (tracheotomy, if indicated)
2. Supportive measures

#### Bulbar-Encephalitic Group

##### Symptoms:

1. Hyperexcitability
2. Restlessness and anxiety
3. Muscular tremors and twitchings
4. Confusion and irritability
5. Lethargy, somnolence and coma
6. Convulsions (chiefly in children)

##### Treatment:

Intensive oxygen therapy

1. Mask
2. Tent
3. Intranasal oxygen
4. By tracheotomy, if indicated

#### Bulbar-Cervical Cord Group

##### Symptoms:

1. Cranial nerve palsies (see group I)
2. Symptoms of cardiorespiratory center involvement (see groups II and III)
3. Diaphragm and intercostal involvement

##### Treatment:

1. Early tracheotomy
2. Intensive oxygen therapy
3. Respirator

Drug therapy is limited largely to prophylactic and supportive purposes. Penicillin as intramuscular injections and nebulized into the tracheotomy tube is of value.

Whole blood transfusions, plasma, and stimulants are given as indicated. Excessive administration of intravenous fluids is avoided because of danger of pulmonary edema.

Sedatives should not be used. Nursing care and acetylsalicylic acid are usually sufficient to keep most of the patients reasonably comfortable.

John J. Brennan, M. D.

Resident Physician

Carrie Tingley Hospital

Hot Springs, New Mexico

**HOMOLOGOUS SERUM HEPATITIS FOLLOWING TRANSFUSION IN AN INFANT**

Lt. Henry B. Bruyn (J. G.)  
Medical Corps, U.S.N.R. (Inactive)  
Berkeley, California

The Journal of Pediatrics, Vol. 31, No. 1, July 1947.

The occurrence of a fatal case of homologous serum hepatitis in an infant, following transfusions for erythroblastosis fetalis, has prompted this report. It is believed to be the first report of such a case in this age group. The purpose was to stress the fact that the condition is a pediatric problem as well as a military one, and also to present the pathology of the case.

The literature on the subject is reviewed and discussed. The case report and autopsy findings are presented in detail.

Jaundice and anemia had appeared in the first day of life. Clinically erythroblastosis fetalis was diagnosed. The transfusions were given 101, 66, 64, and 61 days before onset of symptoms. The transfusions were all with whole citrated blood obtained from three volunteer donors, all of whom had been on active duty in the Navy and none of whom had been overseas.

Presenting symptoms were lethargy, loss of appetite, fever and vomiting. In three days jaundice was apparent and petechiae were found over the whole body. Thus, the onset was very similar to adult cases.

The laboratory findings, viz., prothrombin deficiency, increased resistance of red cells to hypotonic solutions of saline, the urine and Van den Bergh indicating an obstructive type of jaundice, and a blood picture of macrocytic hyperchromic anemia illustrated many of the important features of acute virus hepatitis.

The post-mortem findings were typical of either homologous serum hepatitis or infectious hepatitis.

A review of the measures of prevention stressed the careful and complete history from all blood donors. Dry heat of 160° centigrade for one hour is advocated of all possible contaminated equipment. The use of smaller plasma pools is safer than the use of large pools. The author suggests the observation of the recipient for at least six months with determinations of serum bilirubin or bilirubinuria. He suggests

this might yield earlier diagnosis and expectant treatment.

John J. Brennan, M. D.  
Resident Physician  
Carrie Tingley Hospital  
Hot Springs, New Mexico

**TUBERCULOSIS OF THE HIP IN CHILDREN**

Certain Roentgenographic Manifestations, Secondary Changes in the Extremity, and Suggestions for a Program of Therapy

H. R. McCarroll, M. D., and  
R. D. Heath, M. D.  
St. Louis, Missouri

The Journal of Bone and Joint Surgery, Vol. 29, No. 4, October 1947, pg. 889.

Results and conclusions drawn from eighty-six cases of tuberculosis of the hip in children are presented.

In the authors' experience the initial osseous invasion occurred in the cancellous bone on the acetabular side of the joint more frequently than the metaphyseal region of the femoral neck. Phemister and Hatcher, in 1933, reported the majority of casts have initial osseous invasion in the juxta-epiphyseal region of the neck of the femur. The authors feel that this is of little importance since total destruction of the joint almost invariably follows either type.

Prior to 1940 preliminary immobilization until the age of eight or nine was employed. Surgery was postponed until destruction had reached its maximum, and an area of increased bone density was present above the defect. Forty-three cases so treated had thirty-one satisfactory fusions. Of these, six cases required secondary fusions.

The authors present a series of seventy-two cases in all with follow-ups from three years to twelve years. Satisfactory results were obtained in 75 per cent.

The end-results included extremes of shortening, atrophy, instability of knees, and osteoporosis with spontaneous fractures. Roentgenograms revealed premature closure of epiphysis accounting for the shortening. These secondary disabilities were so severe and so disabling that the authors decided it was unwise to continue this plan of therapy.

They decided to use earlier operative fixation whenever the condition of the patient would

permit. Plaster fixation of the hips was used after diagnosis to permit acute symptoms to subside and the patient's general condition to improve.

Four cases were treated by early intra-articular arthrodesis. Draining sinuses followed in three cases and dissolution of the grafts promptly occurred. Solid fusion resulted in only one case. The method was abandoned.

The Brittain arthrodesis was then used. The authors found the placement of the osteotome and tibial graft into the ischium without entering the joint or obturator foramen difficult in children. The displacement of the distal fragment medially as required in the Brittain arthrodesis is also difficult in children. Their results of complete follow-up cases are not available. Of six cases performed, two had absorption of a portion of the graft in one year, and two others had union of grafts at each end and were weight bearing with crutches.

An important point in selection of cases suitable for Brittain's arthrodesis is to make sure that the portion of ischium to be used is not in-

vaded by the tuberculosis. Of the authors' eighty-three patients, extension of the disease into the ischium was present in sixty-three cases (76 per cent).

The British arthrodesis seems to offer as good a possibility for successful arthrodesis as is available. This they accomplish after six months immobilization. If the Brittain arthrodesis is not applicable, some other extra articular type of fixation is performed. Immobilization is maintained for six to twelve months. It is then discontinued and active use and weight bearing started to insure against epiphyseal damage.

In those cases where the patient's general condition is not suitable for surgery, plaster fixation for six months is used to allow the acute phase to subside. Then, active use of the extremity allowed including weight bearing if possible.

John J. Brennan, M. D.  
Resident Physician  
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Hot Springs, New Mexico.

## A Report on the Use of Pyribenzamine Ointment

GEORGE K. ROGERS, M. D.

*The Lois Grunow Memorial*  
Phoenix, Arizona

The use of the antihistamine drug pyribenzamine (tripelennamine hydrochloride) has met with considerable success in the treatment of allergic manifestations. The current literature having numerous reports on the relief they afford in cases of generalized and localized pruritus, contact dermatitis, drug eruptions, erythema multiforme and allergic dermatoses. Friedlaender and Feinberg\* showed that in cases of dermatographism the application of a solution of antihistaminic substances prevented wheal formation on stroking the skin. This led to its application on the sites of allergic dermatoses when relief from itching was pronounced and healing speeded up. This resulted in the development of a two per cent pyribenzamine hydrochloride ointment for the use of topical application. Two preparations were made, the first utilized a wa-

ter soluble base (vanishing cream base) and the second an anhydrous petrolatum (grease) base.

These ointments\*\* were used in a series of twenty-seven cases of skin disorders noted for their refractoriness to the usual methods of treatment. The choice of the vanishing cream or grease base was made depending upon the condition of the skin when seen. In most of the cases the vanishing cream base was used except in several cases where the skin was excessively dry and scaly. Many of the cases in this series had received various forms of topical remedies including X-ray therapy. Most of the cases were given pyribenzamine to be taken internally as well as in the ointment form. Some cases which had not previously received treatment were given X-ray therapy with or without wet compresses of Burow's solution in conjunction with the ointment.

The first group consisted of seven cases of contact dermatitis. Three cases of contact dermatitis of the eyelids, one case being due to finger

\* Friedlaender, S., and Feinberg, S. M.: Histamine Antagonists: III. The Effect of Oral and Local Use of B-Dimethylaminoethyl Benzhydryl Ether Hydrochloride on the Whealing Due to Histamine, Antigen-Antibody Reactions, and Other Whealing Mechanisms: Therapeutic Results in Allergic Manifestations, *J. Allergy* 17: 129, 1946.

\*\* The ointments were supplied by Ciba Pharmaceutical Products, Inc.



nail polish, one to a "dry skin" cream and the cause of the third being unknown. Two cases were given the ointment alone (vanishing cream base). The itching in one was immediately relieved and the dermatitis subsided in the course of a few days. The second case showed no improvement after several days and the treatment was changed. The third case was given the salve plus wet compresses. Her itching was relieved in a few hours and the dermatitis subsided in the course of a week. A case of generalized dermatitis due to Lantana stated that this ointment gave him immediate relief from itching but that it resulted in little or no regression of the dermatitis. A case of oil dermatitis of the arms responded in a matter of days. A doctor with a dermatitis of the fingers resulting from contact with rubbing alcohol gained relief from itching and healing slowly took place. The ointment was used in conjunction with X-ray. A

contact dermatitis in the groin of a woman was made definitely worse by the use of this ointment.

The second group was of atopic dermatitis. The eczema in two babies improved slowly but did not prevent flare-ups. The ointment had no effect in two cases seen in adults and in a third case it stopped the itching for a while but later had an irritating effect; a fourth case had relief from itching with temporary improvement of the skin.

The response in five cases of nummular eczema was quite remarkable. However, it is to be remembered that the application of any new drug in these cases may result in a temporary improvement. Three cases had immediate relief from itching and rapid healing, one had temporary relief from itching, the skin clearing temporarily but the eczema recurring while the patient was using the salve. The fifth case

DISEASE	USE OF OINTMENT	RESULTS
Contact Dermatitis		
Eyelids (3)	4 - 10 days	recovered (2) no improvement (1)
General (1)	2 weeks	relief from itching
Groin (1)	3 days	flare-up
Arms (1)	6 days	well
Fingers (1)	2 weeks	almost well
Atopic Eczema		
Infants (2)	3 weeks	temporary improvement with exacerbations
Adults (4)	2 - 6 weeks	no effect (1) stopped itching temporarily, later irritating effect (1) itch no better, skin improved (1) some relief from itching and temporary improvement of skin (1)
Nummular Eczema (4)	6 - 21 days	Recovered (3) itching stopped, skin improving (1) temporary relief from itching and dermatitis. Exacerbation while using. (1)
Pruritus Ani (2)	3 - 4 weeks	some relief
Pustular Psoriasis (3) (Bacterid)	1 - 3 weeks	no improvement (2) flare-up (1)
Seborrhoeic Dermatitis		
Nose (2)	3 - 4 weeks	recovered (1) improved (1)
Chronic Dermatitis		
Lips (1)	2 weeks	unimproved
Exudative Discoid Lichenoid Chronic Dermatosis (1)	3 weeks	temporary improvement in pruritus and skin

stated that the itching stopped and there was a gradual improvement in the eczematous process.

Two cases of pruritus ani, one due to eczema and one of unknown etiology, have received some relief, X-radiation being used in conjunction with the ointment. Three cases of so-called pustular psoriasis of the extremities showed no improvement, one having a flare-up. In two cases of seborrhoeic dermatitis about the naso-labial fold, one healed quickly and the second showed improvement. A case of dermatitis of the lips of unknown etiology showed no improvement. One case of exudative discoid lichenoid chronic dermatosis which had received numerous forms of treatment stated that the ointment stopped his itching for about two weeks and the skin showed definite improvement. However, there was a flare-up of his eruption while he was using the salve.

#### SUMMARY

Two per cent pyribenzamine ointment has been a definite help both in the relief of itching and in the healing of dermatoses which are usually difficult to treat. One must watch for primary irritant reactions as well as sensitization reactions.

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# ANNUAL MEETING

## ARIZONA STATE MEDICAL ASSOCIATION

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May 19-21, 1948, Phoenix, Arizona

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WESTWARD HO HOTEL,  
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Registration  
Scientific and Business Sessions  
Hall of Exhibits

Headquarters for rooms  
President's Dinner Dance  
Auxiliary Sessions

### Scientific Sessions

SHRINE

### Guest Speakers . . . .

1. J. DEWEY BISGARD, M. D., Professor of Surgery, University of Nebraska, (will present three lectures)
  - a. "The Cancer-Ulcer Problem of the Stomach"
  - b. "Intestinal Obstruction"
  - c. "Surgical Management of Lesions of the Gallbladder and Common Duct"
2. J. W. CONN, M. D., Associate Professor of Medicine, University of Michigan (will present three lectures)

- a. "Management of Diabetic Coma"
- b. "Obesity, Physiology and Management"
- c. "Anti-thyroid Drugs in Hyperthyroidism"
3. IRVIN E. HENDRYSON, M. D., Department of Orthopedics, University of Colorado (Auspices of National Foundation for Infantile Paralysis)  
"The Early Diagnosis of Poliomyelitis"

### Local Speakers. . . .

1. BRODA O. BARNES, M. D. (Kingman)  
"Treatment of Menstrual Disorders in General Practice"
2. OTTO L. BENDHEIM, M. D. (Phoenix)  
"Psychiatric Aspects of the Low Back Problem; the Narcotherapeutic Approach"
3. WILLIAM A. BISHOP, Jr., M. D. (Phoenix)  
"Differential Diagnosis of Radiating Pain Into the Upper Extremity"
4. ROBERT S. FLINN, M. D. (Phoenix)  
"The Care of the Dying"
5. JOHN RAYMOND GREEN, M. D. (Phoenix)  
"Electro-encephalography: Its Place in Neuro-Diagnosis"
6. J. B. LITTLEFIELD, M. D. (Tucson)  
"Surgical Treatment of Varicose Veins"
7. D. W. MELICK, M. D. (Phoenix)  
"Cardiac Injuries"

8. JOHN S. MIKELL, M. D. (Tucson)  
"The Use of Radium in the Nasopharynx, a Preliminary Report"
9. A. HARRY NEFFSON, M. D. (Tucson)  
"Acute Obstructive Laryngotracheobronchitis"
10. Z. B. NOON, M. D. (Nogales)  
"Postoperative Spinal Punctures and Reactions"
11. E. PAYNE PALMER, M. D. (Phoenix)  
"Riedel's Struma—a Case Report"
12. M. JAMES WHITELAW, M. D. (Phoenix)  
"A New Media for Hysterosalpingography and Its Clinical Evaluation"
13. FLORENCE B. YOUNT, M. D. (Prescott)  
"Agenesis of the Right Lungs in Identical Twins—a Case Report"

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# ANNUAL MEETING

## ARIZONA STATE MEDICAL ASSOCIATION

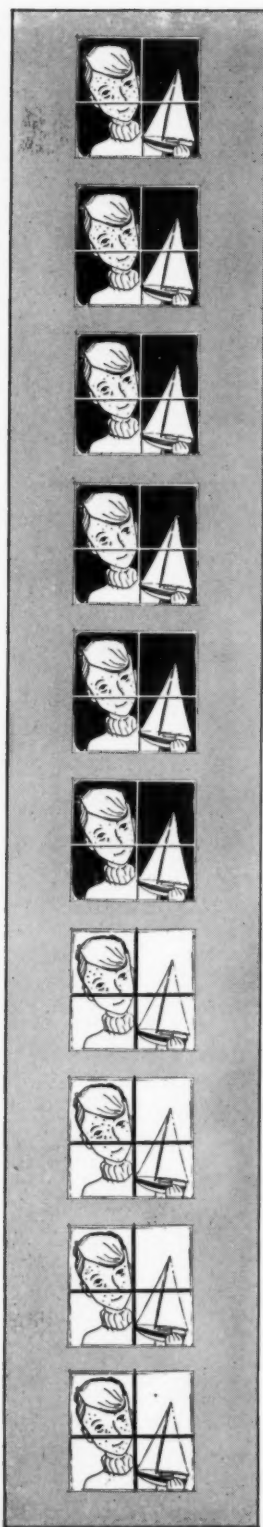
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Space is a "sell-out" with little possibility of additions. The membership is urged to peruse the following list of exhibitors in order to appreciate the educational quality of the exhibits to be shown. Each firm and organization promises its best exhibit. The Association for its part will put forth every effort to provide ample time for viewing the various displays.

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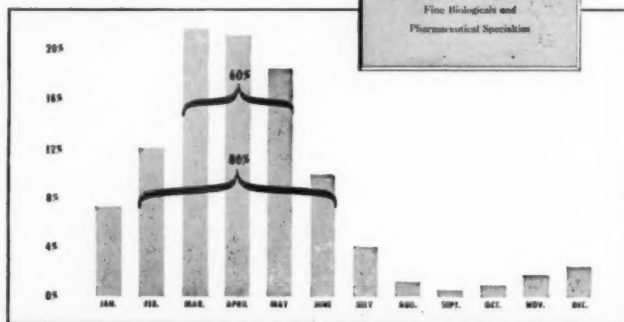
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Percent of measles cases by months from  
U. S. Public Health records, total cases  
1935-1945 = 100 %



# ARIZONA MEDICINE

*Journal of*

ARIZONA STATE MEDICAL ASSOCIATION

Vol. 5 March, 1948 No. 2

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## Editorials

### Jaundice

Accurate appraisal of the jaundiced individual may be difficult in spite of the host of available aids. The history of the patient with particular regard to evidences of alcoholism, of exposure to hepatotoxic agents or plasma infusions, of hemolysis, of past biliary disease, may be helpful. Examination to show hepatic or splenic enlargement, gall bladder distension, edema or ascites, and signs of collateral circulation, with the history alone may enable a diagnosis to be made.

Laboratory tests sometimes add confusion, especially when prolonged obstructive jaundice has produced marked liver damage. Evidences of bile obstruction should be sought after. Duodenal intubation is notoriously inaccurate. A negative Schmidt test on the stool for bile may be present with a low bilirubin content of a bulky stool and thus mislead. Urinary and fecal urobilinogen studies when low value are obtained show complete biliary obstruction.

A very high serum bilirubin level, a reduced serum protein and reversal of the serum albumin-globulin ratio, a lowering of the plasma cholesterol ester fraction, and a failure of delayed prothrombin time to respond to administration of Vitamin K, all may indicate serious primary or secondary parenchymatous hepatic disease. Increased venous galactose in an intravenous galactose tolerance test and reduced synthesis of hippuric acid also usually indicate parenchymatous liver damage.

Serologic tests of cephalin flocculation and thymol turbidity when strongly positive usually indicate cirrhosis or infectious hepatitis.

Roentgen studies of the gall bladder in jaundice are commonly of little value, but barium gastro-intestinal studies may show varices or suggest pancreatic tumefaction.

Increased alkaline phosphatase may suggest obstructive jaundice, but along with the van den Bergh test has not proven to be as helpful generally as the above laboratory aids.

In general, accurate history and examination of the jaundiced patient with utilization of some of the laboratory aids, usually enables a working diagnosis to be made. Rarely exploration may be desirable to clarify the situation, it being recalled that in the presence of infectious hepatitis, or acute parenchymatous liver disease the employment of exploration is bad treatment.

### THE WESTERN SOCIETY OF ELECTRO-ENCEPHALOGRAPHY

The Western Society of Electroencephalography held its first scientific meeting at Toland Hall, University of California Hospital in San Francisco, on November 8, 1947.

A constitution was adopted which offers active membership to M. D.'s actively engaged in the field of E. E. G. Investigators in scientific fields related to E. E. G. are eligible for associate membership.

The following officers were elected:

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Vice-Chairman: Knox H. Finley, M. D.  
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Seattle, Washington  
Robert S. Dow, M. D.  
Portland, Oregon

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San Francisco, California  
(Continued on Page 83)

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San Francisco, California  
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Los Angeles, California

The next meeting will be held in San Francisco on April 10, 11, 1948, directly preceding the annual meeting of the California Medical Association. Those wishing to contribute presentations are invited to contact the member of the program committee in their community. Those interested in joining the Society can secure application blanks from the Secretary-Treasurer.

Nicholas A. Bereel, M. D.  
Secretary-Treasurer  
Cedars of Lebanon Hospital  
Los Angeles, California

## Office Methods and Machines

MR. GORDON GOODRICH, Asst. Director,  
Michigan Medical Service

The most uninteresting yet necessary function of voluntary prepaid medical plans is the establishment of efficient office methods.

The subscriber demands prompt payment of his claim for service. Your plan may fail, and rightly so, without proper synchronization of office procedures; or your plan may be at least justifiably criticized for poor handling.

The best operating results could be obtained if one plan or organization could handle both hospital and medical-surgical services. Due to various factors, this is not always possible.

The second best arrangement would be for a separate organization to handle public relations, sales, collections, records, jointly for both hospital and medical plans.

The least satisfactory arrangement is for the medical plan to utilize the sales force, certificate issuance, collection, and records departments of the hospital care plan.

This method, under proper supervision and co-operation, could in most instances work quite satisfactorily.

The third method is the one under which Michigan Medical Service operates at the present time. We utilize the Public Relations, Sales, Certificate Issuance, Collections, Records Depart-

ments, and Business Machines Department of the hospital plan; but have our own Doctors Relations Department, Claim Department, Treasurer's Department, Comptroller's Department, and Statistical Department.

More specifically, the joint operations agreement provides that Michigan Hospital Service shall:

1. Maintain a Public Relations Department.
2. Hire, train, and maintain adequate sales personnel to offer both the hospital and surgical plan to the general public through group enrollment.
3. Arrange for billing and collection of subscription fees from enrolled groups.
4. Maintain complete enrollment records reflecting the current status of subscribers.
5. Michigan Hospital Service agrees also to provide through the use of I.B.M. Machines such statistical data as may be called for by Michigan Medical Service.

The agreement just discussed was entered into by Michigan Medical Service to avoid duplication of effort and to reduce the cost of operations of both plans. A complete package embodying both hospital and surgical benefits is thereby offered the public, requiring but one deduction and permitting the employer to remit to but one organization.

Michigan Medical Service retains its own identity as to executive administration, doctor's relations, and payment of claims.

At this point, I will explain that portion of office procedures which is handled directly by Michigan Medical Service and later on outline the International Business Machines Procedure.

Michigan Medical Service furnishes all doctors who are licensed to practice in Michigan with an adequate supply of doctor's service reports. To eliminate paper work on the part of the doctor's office, the forms are concise and flexible. There are only two basic forms. One is designed for reporting medical care as rendered while the subscriber is a bed patient in the hospital; the other for reporting surgical, obstetrical, X-ray, and anesthesia services. Doctors are instructed to submit their report of service immediately following the discharge of the patient. By furnishing the doctor's office with an adequate supply of service reports, any reason for an exchange of correspondence between the doctor, subscriber, and Michigan Med-

(Continued on Page 85)

## WESTERN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS

### Seventh Annual Meeting

The Gold Room, Fairmont Hotel  
San Francisco, California

**Saturday, April 10, 1948**

#### PROGRAM

9:00-9:30 A. M.

President's Address, Dr. William P. Shepard, Third Vice President, Metropolitan Life Insurance Company, San Francisco, California.

9:30-10:00 A. M.

"INDUSTRIAL HYGIENE AND MEDICINE, TOMORROW MEASURED BY TODAY," Dr. Richard C. Walmer, Medical Director, Industrial Hygiene Foundation, Pittsburgh, Pa.

10:00-10:30 A. M.

"THE CONTRIBUTION OF THE SCIENCES TO INDUSTRIAL MEDICINE AND HYGIENE," Dr. Francis R. Holden, Research Associate, Radiation Laboratory, U. S. Navy, San Francisco, California, formerly Chief Chemist, Industrial Hygiene Foundation.

10:30-11:00 A. M.

Discussion period for previous three papers.

11:00-12:00 A. M.

"PROBLEMS RELATIVE TO POSSIBLE PHYSIOLOGICAL EFFECTS CAUSED BY RADIATION," Dr. Fred A. Bryan, associated with the Atomic Energy Project, University of California at Los Angeles, formerly active in the Medical Division of the Manhattan Project. (Accompanied by new sound color film, "OPERATION CROSSROADS—RADIOLOGICAL SAFETY SECTION.")

2:00-2:30 P. M.

"THE DOCTOR'S OFFICE IN ACCIDENT PREVENTION," H. K. Lambie, El Cerrito, California, Safety Consultant.

2:30-3:00 P. M.

"INDUSTRIAL NURSING TODAY, AN EVALUATION," Mrs. Roberta McMahon, R. N., Eitel-McCullough Company, San Bruno, California.

3:00-5:00 P. M.

SYMPOSIUM, A panel with audience participation discussing the State Compensation Insurance Law, its administration, its procedures, and problems connected therewith.

WILLIAM P. SHEPARD, M. D., President  
Metropolitan Life Insurance Co.  
600 Stockton Street  
San Francisco 20, California

CHRISTOPHER LEGGO, M. D., Secretary  
C & H Sugar Refining Corp., Ltd.  
Crockett, California

(Continued from Page 83)

ical Service is held to a minimum. The above method facilitates prompt payment to doctors for services rendered.

All such service reports when received by Michigan Medical Service are referred to the Verification Department, whose function it is to confirm the enrollment of the subscriber and make such corrections as may be necessary in the subscriber's name, group, service, and certificate number.

After having confirmed that the subscriber is enrolled in Michigan Medical Service and that the certificate is being maintained on a current basis, the reports are referred to the experience file where a cross file index, alphabetically by subscriber's name and also by contract number, is maintained as a reference guide to paid and pending claim files.

The alphabetical file is referred to only in the absence of a subscriber's group, service, or certificate number. We have found numerical filing to be more accurate and have discontinued alphabetical filing other than as a cross index due to the problems it presented in distinguishing the correct patient because of the many similarities of names in our enrollment records. For example, on the General Motors enrollment, there are over 4,000 subscribers by the name of Johnson.

The claim experience cards are carried on eight Cardineer Wheel Files. Each wheel has a capacity of 5,000 cards. If there is a record of a previous claim, the doctor's service report is indexed as to the existing claim number and the corresponding file is requisitioned from the general file department for review by the examination department.

If there is no record of a previous service, a file must be established. A suspense record of the reported service is immediately prepared and filed so a reference will be available during the processing of the claim file. This suspense record is replaced by a permanent record card prepared in the Business Machines Department from information obtained from a copy of the route sheet. The preparation and purpose of the route sheet just referred to will be discussed as the next step in our general operation. However, before going on to the next step, I should like to mention that our adoption of the Cardineer Wheel File method of filing reduced the

number of employees required in that particular department one-third.

Displaced personnel was immediately assigned to other departments, eliminating the necessity of going outside of the organization at that time for inexperienced and untrained help.

To review our procedure briefly up to this point, we find that the doctor's report of service as received is now verified as to the eligibility of the subscriber, and a suspense record has been prepared. This brings us back to the point of the route sheets.

The purpose of the route sheet is to provide the examination department with a transcript of the enrollment record of the subscriber, name of the hospital, including the admittance and discharge dates, as well as a posting medium to serve as a check requisition to the Treasurer's Department.

The route sheet is prepared in duplicate, recording complete information from the doctor's service report and enrollment records. A permanent claim number is then assigned, and the carbon copy of the route sheet is released to the Business Machines Department where a statistical card is cut setting up the estimated reserve for the claim and subsequent printing of the claim index card which becomes a part of the reference index of the experience file.

The claim file is then ready for review by the examination department.

A filter system is used in the examination of claims. Junior examiners are permitted to handle only minor surgery. More complicated procedures are referred to experienced examiners, who are responsible to a chief medical examiner for counsel. The chief medical examiner is a layman. He in turn is responsible to the medical director who is a doctor of medicine. Claims involving unusual procedures or new operative technique are reviewed by a medical advisory board consisting of a panel of twelve doctors who convene every two weeks at a luncheon meeting. No pay. Not necessarily participating doctors.

Claim files as approved by the Examination Department are released to the Accounting Department for preparation of checks. Checks are typed on electromatic typewriters. We have found that the use of the electromatics increased production and reduced the fatigue of the operator, in addition to providing uniform legible copies. Prior to the use of electromatics the

Business Machines Department experienced difficulty in deciphering the statistical coding appearing on the check voucher copies. This in turn led to errors in statistical data and record keeping.

Checks are typed so as to provide an original and four copies. Copies are distributed as follows: (1) two copies to the Business Machines Department, one of these copies for statistical data and the other copy as notice of payment to support the withdrawal of a pending reserve punch card; (2) third copy to the accounting department to be filed in check number order; (3) fourth copy to be filed in the claim jacket as a record of payment.

Claim jackets upon which a payment has been made or which must be held as pending due to lack of complete information are filed numerically by claim number in the general file department. The general filing procedure is divided into two classifications. Pending and paid jackets are separately filed.

It was my intention at this point to explain in detail the different operations handled by the Business Machines Department. However, I will summarize and eliminate the details.

Medical and hospital service records are of such a nature that they lend themselves admirably to a punch card system for billing, accounting, and statistics.

The numerous records produced by our group billing cards before they become a part of the billing cycle and the repeated use of them for billing purposes, with simplicity of correction when necessary, makes for highly economical operation.

Volume accounting and statistical records are always a problem. Punch card verification is the most positive check for accuracy that we know of and speed of subsequent operations as well as the availability of a variety of information from the one verified source makes for fast, efficient, and flexible performance.

Perhaps you gather from the foregoing remarks that we are well pleased with our punch card system. We are!

I. B. M. equipment is used for the following:

- (a) Processing new applications.
- (b) Preparation of group billings.

- (c) Preparation of direct payment billings.
- (d) Preparation of direct payment accounts receivable and daily cash payment reports, as well as monthly summarization of income.
- (e) Claim index cards.
- (f) Claims paid cards.
- (g) Monthly inventory of outstanding claims.
- (h) All Accounting Department general ledger accounts.
- (i) A monthly report of income for the past four months is tabulated by group.
- (j) The following reports are prepared from services paid cards:
  1. Services paid by date of service.
  2. Group experience summary of services paid by group, date of service, and type of contract. From previous and current summary cards a group experience report is prepared from inception to date.
  3. Itemized listing of services paid by county and doctor, cutting summary cards. Summary cards are used for annual report of doctors' payments.
- (k) Periodic reports of services paid by relationship and type of service rendered are prepared.

We have prepared two I. B. M. Flow Cards which I have here for your examination. One indicates how new applications are processed, and the second shows I. B. M. procedure in handling direct payment billing.

These remarks cover in a general way the Michigan Medical Service office methods and the use of machines. Each plan should be constantly striving to improve its office procedures by encouraging its employees to suggest new methods. It should keep abreast of the times and utilize time-saving methods and new machines wherever adaptable. New office machines are in process of development throughout the country, but shortages of material and strikes have held up their release.

If all plans continually attempt to render better service to the subscriber and to the doctor, then there will be no reason for receiving complaints and we can't help but go forward and increase enrollment.





## Increasing recommendation for **gold therapy** in active rheumatoid arthritis

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1. Combined Staff Clinics of the College of Physicians and Surgeons, Columbia University: *Am. J. Med.* 1:676 (Dec.) 1946.
2. Comroe, B. I.: *J.A.M.A.* 128:848 (July 21) 1945.
3. Council of Pharmacy and Chem-

istry: *New and Nonofficial Remedies*, 1947, Philadelphia, J. B. Lippincott Company, 1947, p. 477.

4. Freyberg, R. H.; Block, W. D., and Levy, S.: *J. Clin. Investigation* 20:401 (July) 1941.

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## NEWS NOTES

### INTERNATIONAL SURGICAL ASSEMBLY

The Sixth International Assembly of the International College of Surgeons will be held in Rome, Italy, at the invitation of the Italian Government, during the week of May 16-23, 1948, under the presidency of Professors Raffaele Bastianelli and Raffaele Paolucci of Rome, and Mario Dogliotti of Turin. The Secretary of the Assembly is Prof. Giuseppe Bendandi of Rome. Attendance is not limited to the membership of the College: all surgeons in good standing in their medical organizations are invited. Scientific meetings, scientific and commercial exhibits, visits to the Universities of Turin and Milan have been arranged, together with tours to other medical centers in Europe. A special exhibit of ancient texts on surgery is being arranged by Prof. Davide Giordano of Venice, Honorary President, under the active presidency of Prof. Adalberto Pazzini, Professor of History at the University of Rome. This extraordinary exhibit dealing with ancient surgery will be on display in the Vallicelliana Library in one of the historical buildings of the Vatican. Detailed information may be obtained from Dr. Max Thorek, General Secretary, 850 Irving Park Road, Chicago 13. For travel information, address the All Nations Travel Bureau, 38 S. Dearborn Street, Chicago, the official travel representatives for this Assembly. Those desiring to present scientific papers address Dr. Karl Meyer, Cook County Hospital, Chicago; Dr. Henry W. Meyerding, Mayo Foundation, Rochester, Minnesota; or Dr. Herbert Acuff, Acuff Clinic, 514 W. Church Street, Knoxville, Tennessee. Those from Canada should direct their inquiries to Dr. Lyon Appleby, 925 W. Georgia Street, Vancouver, B. C.

### THE AMERICAN BOARD OF OPHTHALMOLOGY

#### PRACTICAL EXAMINATIONS—1948

Baltimore, May 20 - 25th  
Chicago, October 6 - 9th

Written Qualifying Tests will be held annually, probably in January of each year. Applicants for the January, 1949 Written Qualifying

Test must be filed with the Secretary before July 1, 1948.

A supplement of diplomates from January, 1948 will be sent gratis to all purchasers of the Board's Directory. This supplement is arranged alphabetically and geographically. No biographical material is included.

**IMPORTANT:** Diplomates are urged to keep the Board office informed of all changes of address, so that the files can be kept up-to-date.

#### OFFICERS FOR 1948

Drs. Goar, Chairman  
Dunnington, Vice-Chairman  
Beach, Secretary-Treasurer  
Dunphy, Assistant Secretary.

EXECUTIVE OFFICE: Cape Cottage, Maine

### The New St. Joseph's Hospital

Progress of the St. Joseph's hospital fund campaign is indicated by the recent announcement of an executive committee and a citizen's advisory committee by Frank C. Brophy, general chairman for the drive.

Those serving with the executive group are Robert A. Becker, Frank E. Coles, Ray Cowden, Barry Goldwater, C. E. Gollwitzer, Hugh C. Gruwell, John M. Jacobs, Read Mullan, Edward V. O'Malley, Riney B. Salmon and Glenn Taylor.

The citizen's advisory committee includes Walter R. Bimsen, Richard J. Cullen, Charles Korrick, John G. O'Malley, A. R. Staley, P. E. Tovrea and Dell E. Webb.

In making known the appointments Brophy said, "It is most encouraging to have the help of a number of our leading citizens as we present the appeal for the new St. Joseph's hospital. Business and civic leaders representing all faiths are united in this effort to help provide adequate hospital facilities for Phoenix and Arizona."

We feel sure that these campaign leaders will have the active support of thousands who will give generously of their time and their money to make the new hospital a reality. Announcement will be made soon of those who will present our appeal throughout the state of Arizona."

Present hospital accommodations in Phoenix are 44% below the national standard. The new institution will provide an additional 350 beds and will include a School of Nursing, as well

(Continued on Page 91)



## LOIS GRUNOW MEMORIAL CLINIC

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### DEPARTMENT OF MEDICAL RESEARCH

Carlos A. Tanturi, M. D.



(Continued from Page 89)

as many new features. The project, said to be the largest of its kind ever undertaken in the state, will cost in excess of \$4,500,000. The buildings will be located at Thomas Road between Third and Fifth Avenues.

## Twentieth Anniversary Year of Harofe Haivri

The Hebrew Medical Journal

The attention of the medical profession is directed to the appearance of the Fall issue of HAROFE HAIVRI (The Hebrew Medical Journal), a semi-annual bilingual publication edited by Moses Einhorn, M. D.

In the medical section, the following subjects are offered: "The Importance of the Rh Factor in Clinical Medicine," by Philip Levine, M. D., and "Pharmacology and Toxicology of Streptomycin" by Ernst Pick, M. D.

The section on Palestine and Health contains the following articles: "The Contribution of Bacteriologists for the Control of Infectious Diseases in Palestine" by L. Olitzki, M. D., of the Hebrew University; "The Present Status of Tuberculosis in Palestine" by A. Wolowelsky, M. D. and "Plastic Surgery in Palestine" by Ernest Wodak, M. D.

Under the heading of Historical Medicine Dr. Leon Nemoy of Yale University writes on the great philosopher and physician of the 13th century, Ibn Kammuna. Dr. Yom-Tov Levinsky discusses in his article on Folklore Medicine, the legends surrounding frogs and spiders as healing agents.

The original articles are summarized in English to make them available to those who are unable to read Hebrew. The editorial office of THE HEBREW MEDICAL JOURNAL, 983 Park Avenue, New York 28, N. Y., will be glad to furnish any further information desired.

ST. JOSEPH'S HOSPITAL  
507 N. Fourth St., Phoenix

That St. Joseph's Hospital in Phoenix serves not only the immediate area but the entire state as well, is revealed in a report of the Sisters of Mercy covering the 60-day period ending November 26.

The report discloses there was a total of 253 patients from outside the Phoenix metropolitan

area. Of this number approximately 25 per cent came from outside Maricopa County.

Records for the period covered in the report show the following breakdown by counties: Apache, two patients; Coconino, seven; Graham, five; Gila, 10; Mohave, four; Navajo, four; Pima, five; Pinal, 11; Yavapai, 14; and Yuma, four.

Recent reports of this nature have brought to light an increasing demand for St. Joseph's facilities on the part of those residing outside of Maricopa County.

Hospital officials point out that this trend is merely one of the many justifications for the new St. Joseph's medical center planned in Phoenix at a cost of \$4,500,000. A campaign for funds for the new hospital was launched after January 1, the exact amount of which is still to be decided upon.

## ABSTRACTS

### Tuberculosis Abstracts

*A Review for Physicians*

The diagnosis of active pulmonary tuberculosis rests on three pillars—symptoms, roentgenology, and the finding of the tubercle bacillus. Of this triad the first two are not specific for the disease; X-ray shadows can only suggest the diagnosis, and symptoms may be vague or appear late in the disease. Physical signs and tuberculin tests have definite but limited diagnostic significance. The demonstration of tubercle bacilli, however, establishes the diagnosis beyond dispute. In this disease, therefore, the laboratory can render a unique service to the physician. It may be more fully utilized if the possibilities and limitations of bacteriological methods are understood.

#### THE BACTERIOLOGICAL DIAGNOSIS OF PULMONARY TUBERCULOSIS

*Diagnostic significance of bacteriologic findings.* The culturing of sputum and/or gastric contents is of paramount importance if a complete diagnostic picture is desired. If frequent and technically expert studies are made both positive and negative results have a diagnostic importance equalled by few laboratory procedures in any disease. Under the conditions just stated, the diagnostic significance of bacteriologic findings may be described as follows:

(1) Tubercle bacilli are demonstrable in practically 100 per cent of patients with frankly active pulmonary tuberculosis. Exceptions to this dictum are: In a considerable percentage of patients with hematogenous disseminations and

(Continued on Page 93)

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Medical Directors, Pasadena, California

(Continued from Page 91)

without cavities, tubercle bacilli cannot be demonstrated for long periods of time. In about 20 to 30 per cent of patients with minimal, asymptomatic tuberculosis, tubercle bacilli cannot be demonstrated with the methods at present available.

(2) Failure to find tubercle bacilli on frequent subsequent examinations in patients who previously had positive findings, strongly suggests that the process has become arrested.

(3) Failure to find tubercle bacilli on at least ten specimens, if all available methods have been used, practically excludes the diagnosis of active pulmonary tuberculosis with the exceptions noted above.

(4) Demonstration of tubercle bacilli in sputum or gastric contents proves, for all practical purposes, the existence of active *pulmonary* tuberculosis. In rare cases, however, tuberculous lesions occur in the upper respiratory tract (including trachea and large bronchi which may shed bacilli in the absence of demonstrable pulmonary tuberculosis. Nonpathogenic, acid-fast bacilli, which resemble but are *not* tubercle bacilli, have occasionally been observed and cultured from human secretions. In case of doubt, acid-fast bacilli must be identified by animal inoculation.

The diagnostic significance of negative bacteriologic findings depends on the clinical and roentgenological picture: In patients with moderate or large amounts of purulent sputum, with obviously active pulmonary lesions, even three or four negative smears and concentrates are a strong argument against the diagnosis of pulmonary tuberculosis. On the other hand, in patients with minimal or no sputum and in whom the pulmonary lesions are small, without cavitation and of questionable activity, negative bacteriologic findings assume diagnostic importance only after many cultures have remained negative.

*Prognostic significance of bacteriologic findings.* Disappearance of tubercle bacilli from previously bacilliferous secretions suggests that the process has become arrested. Absence of tubercle bacilli, at least in smears and concentrates, is one of the requirements in the National Tuberculosis Association's Diagnostic Standards for classifying a patient as "apparently arrested" or "arrested."

Fluctuations in the number of tubercle bacilli in sputum and gastric contents are frequent and have little prognostic significance. Grading of sputum records by the Gaffky scale should be discouraged. For clinical purposes it is sufficient to grade reports according to gross distinctions, such as "many bacilli," "few bacilli" and "very rare" on direct smear; "bacilli present only in concentrates;" "sputum or gastric positive on culture."

Methods for reasonably accurate estimation of  
(Continued on Page 95)

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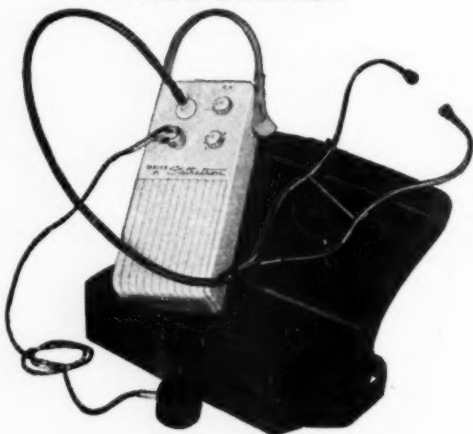
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(Continued from Page 93)

the number of bacilli have been worked out but they are too complicated for routine use.

An irksome problem is the patient who, after adequate treatment, fulfills the requirements for the classification "arrested" but from whose sputum or gastric contents an occasional positive culture is obtained. Many such patients live normal lives without breakdown. There is, however, some evidence that such patients reactivate their disease more frequently than those in whom all cultures are negative.

*Evaluation of bacteriologic methods.* Under the assumption that competent laboratory work is done, one may expect that cultures of sputum and gastric contents may together contribute between 30 and 40 per cent to the total positive findings. Between 60 and 70 per cent of the new admissions, upon whom a positive diagnosis will be established by the examination of smears and concentrates, will be so diagnosed by one of the first three examinations.

These figures indicate general trends; they are, of course, largely dependent on the type of patients under consideration.

Even with the best available methods it is not possible to demonstrate tubercle bacilli in all patients with active tuberculosis. This is due to technical deficiencies and because some patients expel bacilli only at irregular intervals.

*Collection of Specimens. Sputum:* Sputum is

collected in sterile wide-mouthed bottles with sterilizable screw-tops. At least 15 cc. should be collected, even if it takes several days to do so. Patients must, of course, be instructed to collect only sputum—that is, secretions coming up from below the larynx, and not saliva or postnasal discharge.

*Gastric contents:* Fasting gastric contents must be examined in all patients who have no sputum and those in which sputum examinations have been negative. Such specimens must be sent to the laboratory immediately after withdrawal and must be promptly prepared for culture, since prolonged contact with gastric juice seems to impair the viability of tubercle bacilli.

*The Bacteriological Diagnosis of Pulmonary Tuberculosis, Max Pinner, M. D., Veterans Administration Technical Bulletin, October 10, 1946. (Original paper includes laboratory directions and bibliography.)*

Arizona Tuberculosis and Health Association

408 Heard Building, Phoenix, Arizona.

NEW YORK, N. Y., Feb. 1.—Establishment of a number of teaching and research fellowships in the field of tuberculosis by the National Tuberculosis Association was announced today by Dr. Esmond R. Long, director of the NTA's Division of Research. The action was recommended by the NTA's Research Council.  
(Continued on Page 97)

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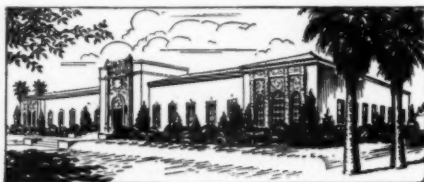
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(Continued from Page 95)

mended by the executive committee of the NTA's medical section, the American Trudeau Society.

Annual stipends for the fellowships will range from \$2,400 to \$3,200, according to Dr. Long. Provision will also be made for laboratory fees and incidental expenses of like character.

The fellow hips will be limited to graduates of American schools for teaching and investigation in the United States. While preference will be given to applicants with a Doctor of Philosophy or Doctor of Medicine degree, fellowships will not be restricted to the holders of these degrees.

Applications will be considered in the fields of pathology and bacteriology, clinical medicine, epidemiology and social and statistical research. Applicants may elect the institutions in which they wish to study.

Persons interested in obtaining a fellowship should write to Dr. James E. Perkins, managing director, National Tuberculosis Association, 1790 Broadway, New York 19, N. Y., for further information.

#### NATIONAL TUBERCULOSIS ASSOCIATION

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Plans are being made for a scientific exhibit to be held in connection with the annual meeting of the National Tuberculosis Association at the Hotel Pennsylvania, New York, N. Y., June 15 to 18, 1948, according to an announcement by Dr. William H. Roper, chairman of the Scientific Exhibit Committee.

Individuals interested in exhibiting material dealing with various aspects of tuberculosis and also non-tuberculous pulmonary disease are invited to submit, not later than March 1, a preliminary description of the proposed exhibit. The description should be sent to Dr. William H. Roper, director, Research Section, Army Medical Research and Development Board, P. O. Box 6027, Fitzsimons General Hospital, Denver 8, Colorado.

Because of space limitations, the committee has stated it reserves the right to use its discretion in the final selection of material.

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## *Report of Delegate*

### **The Arizona State Medical Association**

Cleveland Session, January 5 to 9, 1948  
House of Delegates

American Medical Association

The annual interim session of the House of Delegates of the American Medical Association was of unusual interest, because of the special scientific and technical program which was developed for the purpose of providing post-graduate education for the general practitioners. Two days were devoted to technical and commercial displays, as well as scientific discussions by outstanding medical authorities in phases of practice generally encountered by the general practitioner. There were over 3000 physicians registered for this meeting.

Meetings held at the same time, besides the House of Delegates, included the 8th Annual Congress of the Council on Industrial Health, a "Grass Roots" Conference for County Medical Society Officers, and a special Midwest Regional Conference of the Council on Medical Service.

The meeting arranged by the Council on Industrial Health was constructed also with the general practitioner in mind, and included discussions on physical examinations for industrial workers, administrative practices, applied physiology, first aid in emergency services in industry, radiation medicine, management of occupational diseases, traumatic surgery and rehabilitation of injured workman.

The mid-western conference of the Council on Medical Service, held on January 4, devoted half of its program to discussions relating to central office A.M.A. relations to the State and County Medical Societies, and the afternoon portion of the program was devoted to discussions of medical public relations by three outstanding State Medical Association's public relations secretaries.

The "Grass Roots" Conference of County Medical Society officers was devoted, largely, too, in the interest of the general practitioner. Papers were read suggesting methods of increasing the number of G. P.'s, on how to uphold

(Continued on Page 101)

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(Continued from Page 99)

their prestige, and their role as leaders in their communities.

On Wednesday, Jan. 7, 1948, the newly created A.M.A. gold medal award was presented to Dr. A. C. Sudan, Kremmling, Colo., at an open general meeting in the Cleveland auditorium. The presentation was made to Dr. Sudan by Mr. Oscar Ewing, newly appointed administrator of the Social Security Agency in Washington, appearing on the program with Mr. Clinton Anderson, Secretary of Agriculture, in the President's Cabinet. Dr. Sudan had been elected to this honor by the members of the House of Delegates the first day of the Interim Session from a list of three, selected from among hundreds of nominations, by the Board of Trustees of the A.M.A., and the executive committee of the Section on General Practice. The press and various national periodicals were very generous in their news spread of this event throughout the nation.

During the meetings of the House of Delegates, frank discussions were held on various phases of medicine's problems in America today. Analyses of several of our procedures, both present and future, were presented. Among the im-

portant resolutions considered seriously and adopted related to

1. Nursing Problems: The previously appointed Committee on Nursing Problems presented its report in which the recommendation was made that a permanent conference committee be created. The committee henceforth will consist of fifteen members, five from the A.M.A., five from the American Nurses Association, and five from the American Hospital Association.

2. The House adopted the report of the Reference Committee on Medical Service. In this report, the House of Delegates reinstructed the Council on Medical Service to continue to correlate and extend voluntary prepayment medical care plans in all phases as rapidly as possible throughout the United States, to cover as large a percentage of the population as possible, particularly the low income group, in the shortest possible time.

3. The House reaffirmed its approval of the Red Cross Blood Bank, with the proviso that the local county or state medical societies be responsible for safety to recipients, as well as providing accurate technical details, through

(Continued on Page 103)



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(Continued from Page 101)

trained personnel. In this connection, the House voted to ask the American Red Cross to accept a permanent committee from the Association for the purpose of helping to coordinate the medical aspects of Red Cross activities.

4. Many previous resolutions have been adopted in years past by the House, relative to Hospitals exploiting the services of the physicians, or actually entering into the practice of medicine, particularly in the fields of anesthesiology, radiology, pathology and physical therapy. Resolutions were presented again during this session, devoted to these subjects. The House adopted the report of the reference committee wherein the Board of Trustees were instructed to name a committee of five, who will confer with the members of the Specialty Boards committees, and appropriate hospital authorities, for the purpose of "putting into effect" the resolutions previously passed by this House of Delegates relative to hospitals who continue to practice medicine without a license.

5. The House adopted the report of the reference committee on the report of Dr. E. L. Henderson, Chairman of the Board of Trustees,

relative to the organization of the World Health Association, and commended the delegates and alternates for the part which they displayed in the creation of this important international medical society.

6. Through acceptance of the report of another reference committee, the House adopted a resolution calling for the creation of the Committee of Five, two of whom shall be general practitioners, who will cooperate with the Council on Medical Education and Hospitals, the Association of American Medical Colleges, and the American Hospital Association for the purpose of studying the supply and distribution of internes, with particular interest on the G. P.'s, as well as to cooperate with these and other interested agencies, in an effort to arrive at a method which will lead to a better and more equitable distribution of internes and hospital residents.

7. At this meeting, a special committee created last year presented its report, with respect to streamlining the operations of the House of Delegates, so that its work can be carried on more efficiently without eliminating democratic

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principles. The House adopted the report of this committee, which will change entirely the procedures, in many respects, of the orderly functioning of the House of Delegates; at the same time, eliminating lost motion and wasted time.

8. The House of Delegates nodded approval of a resolution raising membership dues, after a lengthy explanation of financial losses incurred last year. Many causes were exhibited for this loss in the report of the Chairman of the Board of Trustees, and subject to review by any critical medical analyst, in the January 17, 1948 issue of the Journal of the A. M. A., page 184, titled Association Finances. The House accepted the suggestion that the dues this year shall be \$12.00, and in subsequent years, the rate to be fixed by the Board of Trustees not to be in excess of \$12.00. Or the Board may charge less for the traffic if, in their judgment, dues can be set at a lesser figure without incurring undue losses.

9. The House again, by resolution, expressed its point of view in opposition to the recent message to Congress delivered by President Truman, in which the suggestion was made by innuendo that a national policy of compulsory sickness insurance be adopted by the Congress.

10. Again a resolution was thrown into the session hopper dealing with the term of office of a Delegate to the House of Delegates, attempting to limit the terms of constituent state, sectional, government agencies, or territorial members. The House, with wisdom, rejected the resolution, holding that it was the function of each body sending delegates to determine for themselves whom they wished to elect, for whatever tenure of office in point of years of service, each of their delegates was to serve.

Announcement was made at this session of the action developed by the combined efforts of the A. M. P. C. and Blue Cross Commissions in securing the services of Dr. Hawley, recently resigned as Medical Director of the Veterans Administration. General Hawley will act in an executive capacity to correlate the work, and extend the purposes of Blue Cross and Blue Shield. Official announcement of this merger, with General Hawley as its head, was made at a dinner in Washington, D. C., January 10, 1948, presided over by the President of Times, Inc. Appearing on this program was the President of the American Medical Association, and the Pres-



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ident of the American Hospital Association.

In connection with prepayment medical care plans, A. M. C. P. announced its adoption of the name Blue Shield as an appropriate identifying symbol, and official insignia for its registered member plans. The reason for this action was for the purpose of promotion and enrollment of members, believing that the term Blue Shield will have a tremendous assistance in promotional value and sales of prepayment medical care, the same as Blue Cross insignia has promoted hospital service plans. The name and seal of Blue Shield will be properly registered in the U. S. Patent Office.

A. M. C. P. desires to let it be known that the term Blue Shield is not intended to serve as an indication of approval of any medical Service plan, inasmuch as approval of any plan is the right function of each County or State Medical Association. The A. M. C. P., however, will not accept any medical plan, nor permit the use of the term Blue Shield, which does not meet the minimum standards for acceptance set up by the Council on Medical Service of the A.M.A.

By combined agreement between the Council on Medical Service and the A. M. C. P., the Coun-

cil will continue to award the seal of acceptance to any type of prepayment medical care plan approved and meeting minimal standards, whether that plan affiliates with A. M. C. P., or identified as a Blue Shield Plan. In other words, only plans sponsored and nurtured by professional medical groups are eligible for Blue Shield identification, while the Council on Medical Service can and will accept approved plans, not only of professional medical groups, but others sponsored by lay groups, private insurance carriers, farm or urban organizations, or even by others engaged in group practice.

For two days preceding the Interim meeting of the House of Delegates, the Council on Medical Service, with all members present, met in regular session. Your delegate, having been elected a member of that Council by the House of Delegates last June in Atlantic City, attended all the meetings of that body. He was appointed, also, a member of the Reference Committee on Amendments to the Constitution and By-Laws of the A.M.A., by the Speaker of the House of Delegates.

Respectfully submitted,

Jesse D. Hamer, *Delegate*, Phoenix

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### THE PROFESSIONAL BOARD OF THE ARIZONA STATE MEDICAL ASSOCIATION

The Professional Board of the Arizona State Medical Association met on January 25, 1948. Attending the meeting, which was held at the Westward Ho, were Dr. Hugh Thompson of Tucson, chairman; Dr. B. S. Heywood of Holbrook; Dr. E. A. Born of Prescott; Dr. E. Payne Palmer, Dr. B. L. Snyder and Dr. C. B. Warrenburg of Phoenix. Present also were Dr. Frank J. Milloy, Secretary of the Arizona State Medical Association; Mr. Alan Jackson, Executive Secretary of the Association, and Dr. J. P. Ward, Superintendent of the State Department of Health.

Dr. Snyder submitted his report of the sub-committee on Tuberculosis, with recommendations to the Professional Board of the Arizona State Medical Association. These recommendations included the establishment of a surgical room at the State Welfare Sanatorium, properly equipped with necessary facilities; an increase of from 100 to 200 beds, improvement of physical plant to provide more adequate bathrooms, sterilizing equipment, utility rooms and the like;

a resident physician should be added to the staff; adequate nursing services should be provided; protection of personnel and patients should be considered, including the cleaning of contaminated areas, teaching facilities for ambulatory patients, strengthening of patient education program, professional libraries and adequate quarters for professional and non-professional personnel. Dr. Snyder recommended that the Board support proposed legislation to come before the 5th special session of the current legislature regarding the appropriation of \$42,000 for the creation of a surgery room at the hospital. The Board moved to inform the Council of the Association of its approval of the measure so that the Council might take positive action in support of the measure.

The sub-committee indicated its accord with the program of developing a tuberculosis service for the patients at the Arizona State Hospital. Here the patients having active Tuberculosis have been segregated. All cases are to be reviewed for possible therapy. All patients except the seriously disturbed have been x-rayed, and all new cases to the hospital will be routinely x-rayed.

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The sub-committee further suggested that the medical profession should cooperate very closely with the Veterans Administration in the control of Tuberculosis, especially where veterans have left administration hospitals before treatment is completed or have gone A. W. O. L.

The final recommendation of the sub-committee was that the Board and the Council support the proposed legislation in the 5th special session dealing with the Hill-Burton bill. The Hill-Burton bill would allow the proper authorities in the state to draw from the Federal Government as much as \$450,000 a year for the next five years for the construction of much-needed hospital facilities in the various communities of the state. In order to be eligible for this money the state must first make a survey of the existing facilities and its actual needs in the future. To make the survey a sum of \$30,000 would be required. Arizona is the only state except one which has not made the survey and become eligible for these funds. If Arizona does not make the appropriation at this time, it will lose out, for the opportunity expires in June of 1948. The Board voted to support this legisla-

tion and to make its intention known to the Council.

Other items relative to Tuberculosis were discussed. It was voted, with Dr. Ward asking for such recommendations, that an adequate program for the detection of tuberculosis in children would be to have the local community tuberculin-test each child between the ages of 12 and 16, and then have the state follow through with its program of chest x-rays on these same children. Only those children under 12 whose parents or physician specifically requested a tuberculin test or x-ray would be so served.

The subject of maternal and child health was discussed, with particular reference to crippled children. Dr. Warrenburg is the chairman of the sub-committee on Maternal and Child Health. Dr. Ward, of the State Department of Health, pointed out a distinct need for an administrative director of the Maternal and Child Health division of the State Department of Health. The Professional Board recommended that the State appoint a full-time director of the Maternal and Child Health division at a salary commensurate with the position, and that the appointment be made as soon as possible.

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The sub-committee on Cancer Control under the chairmanship of Dr. E. Payne Palmer, Sr., reported that it may soon be instrumental in the setting up of Cancer Detection Centers in Yuma and Prescott. The fact was emphasized that many doctors were not sufficiently familiar with the programs and policies of the agencies concerned with cancer control. It was recommended that the central office of the Association disseminate the information in such a way as to make it appealing to the doctors as well as properly informative.

The possibility of the establishment of a mental hygiene clinic in Phoenix was discussed. The State Department of Health expects to have some funds available, perhaps as much as \$20,000 obtained from the Federal Government, for mental hygiene activities.

A return to the subject of child health was made with the special mention of the program recently undertaken by the Arizona Society for Crippled Children for aid to children with impaired hearing. Mention was made of Mrs. Newton, a specialist in speech and hearing, employed by the Society and the program she has been conducting. The board expressed a desire

to have more details on the program and to lend its support when it acquired further information on the work Mrs. Newton was doing.

The Board discussed at some length the need for acquainting the medical profession throughout the state with the functions and facilities of all the allied private and public agencies rendering health services to the public. The Board as a group felt that the manner in which this type of information was distributed should be the concern of the central office and the Council, but was positive in its attitude that the information should be made available as soon as possible. Means such as a bulletin could be employed, the Journal could be utilized, or a brochure prepared. It was felt that the same general information could be presented with varying style in more than one publication so that there would not be a tendency for the profession to simply scan one article and forget its contents.

The meeting was adjourned with the Board feeling that a great deal had been accomplished, but that there were a multitude of tasks remaining for the board to tackle.

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**DR. MERRILL HOLDS DINNER MEETING**

Dr. Marriner W. Merrill, chairman of the Health Activities Board of the Arizona State Medical Association, was the host at a dinner meeting at the Westward Ho on Friday evening, January 30. His guests included Dr. Preston Brown, president of the Association; Dr. Frank Milloy, secretary of the Association; Mrs. Olga Welch, Public Relations Director of The State Department of Social Security and Welfare and the chairwoman of the Health Section of the Community Council; Dr. H. D. Ketcherside, president of the Maricopa County Medical Society; Mrs. Erhardt, secretary of the State Board of Nurses Examiners; Dr. Leslie Kober, Maricopa County Society representative to the Health Section of the Community Council; Dr. W. F. King, representing the Maricopa Dental Society; Mr. Guy Hanner of Good Samaritan Hospital; Mr. L. Donald Lau, director of Blue Cross-Blue Shield; Mr. Alan S. Jackson, Executive Secretary of the Arizona Medical Association, and Mr. H. L. Dunham of the Valley Bank, and a member of the Community Council.

The purpose of this dinner meeting was to

set in motion the development of a local health council, along the lines outlined by the American Medical Association. This council would be patterned after the request made of all county societies for the establishment of health councils. The consensus of opinion at the dinner meeting was that use should be made of the already existing facilities, namely the resources of the Health Section of the Community Council, with certain members of the group present at the dinner constituting themselves as the allied professional group of a local health council which would serve in an advisory capacity to the Health Section and would coordinate its activities with those of the Health Section.

Each of those named expressed a desire to participate in the allied group and to carry back to the agencies they represented the information gained and the intent of the meeting as outlined.

Dr. King was named to represent the dental profession. Mrs. Erhardt was asked to represent the nurses. Mr. Hanner was asked to be the hospital representative, and Dr. Kober was named to represent the medical profession.

## Maternal and Child Health Services

### AVAILABLE UNDER THE ARIZONA STATE DEPARTMENT OF HEALTH AND COUNTY HEALTH DEPARTMENTS

This is the first installment of information concerning the allied health agencies.

It is the intent of the office to present a summary, in each issue of the journal, of the various health agencies which stand ready to assist the medical profession in community health problems.

The first installment is contributed by the Arizona State Department of Health and deals with the Maternal and Child Health Division.

In future issues further activities of the Health Department will be outlined, and details concerning the activities of other agencies will be published.

Prenatal and postpartal clinics and medical conferences for well infants and pre-school children are conducted under the auspices of the local health departments. Prenatal and postpartal clinics are available in Cochise, Maricopa, Pima and Yuma counties and child health conferences in Cochise, Maricopa, Pima, Santa Cruz and Yuma counties. Medical service for the clinics and conferences is provided by health department personnel in Pima County and in the other counties by local physicians employed by the State Department of Health on an hourly

fee basis. Nursing service is provided by health department personnel.

A well child medical conference is also conducted in Greenlee County through the cooperation of the Morenci School and the State department of health. A local physician and the school nurse serve this conference.

#### *Prenatal and Postnatal Clinics*

Scope and content of services: Complete medical examination of each patient on initial visit. Blood test for syphilis and hemoglobin determination on first visit. Medical supervision with diet instruction, blood pressure reading, urinalysis, weight at regular intervals varying from every month early in pregnancy to weekly late in pregnancy. Pelvic examination at six weeks postpartum. Public health nursing service is available for conferences with prenatal and postnatal patients to supplement medical supervision and instruction.

#### *Child Health Medical Conferences*

Scope and content of services: Complete physical examination of each patient on first visit and continued medical supervision with special emphasis on diet instructions, evalua-

tion of growth and development, analysis of behavior variations from normal, and provision of immunization against small pox, diphtheria and pertussis. Public health nursing service is available for conferences with mother to supplement medical supervision and instruction.

#### *Nursing Service in the Home*

Public health nursing service is available in the home when indicated to patients registered in health department conferences, or on request to patients under the care of private physician. Specific services rendered in the home are:

1. Instruction and guidance in prenatal and postnatal hygiene.
2. Interpretation of the physical and psychological needs of normal infants and pre-school children.
3. Preparation for delivery when a home delivery is planned and plans for care of mother and infant following delivery.
4. Preparation of the home for the return of mother and infant following a hospital delivery.
5. Demonstration of the care of the infant, preparation of formula if infant is not breast fed.
6. Demonstration of the care of children who are ill and treatments ordered by physician.

Nursing service is also available in the home for supervision of crippled children and rheumatic fever patients carried under the Crippled Children's program of the State Department of Social Security and Welfare or under the care of private physician.

#### *Service to the School Age Child*

Service is available to this group through the health department in Cochise, Coconino, Maricopa, Santa Cruz and Yuma County.

The service is carried on in the school and in follow-up visits to the home by public health nurses.

The nurses assist teachers in screening for visual defects, in recognizing deviations from the normal, and in selecting children for medical follow-up. In Pima County the examinations are done by health department physicians. In the other counties children in need of medical examinations are referred to private physicians. When the family is unable to provide medical care, an attempt is made to arrange for such service through community agencies and clubs.

Immunization programs are carried on through the schools or in the health department office.

In cooperation with the Arizona Society for Crippled Children, hearing programs have been started in Cochise and Coconino Counties and will be available in other counties later.

A dental program for kindergarten and first grade pupils will be available in the near future in Cochise County through the cooperation of the state and county health departments, and the local dentists.

The objective of the program is to provide complete dental treatment services for the pre-school and first grade pupils.

The following services will be covered:

1. Examination and diagnosis.
2. Prophylaxis.
3. Restoration of carious or injured teeth.
4. Pulp treatment.
5. Treatment of gingivitis and mouth infections.
6. Extractions.

Children of families found to be unable to purchase dental care will be referred to the dentist of their choice who will be paid by the State Department of Health on a fee basis agreed upon by the dentists of the county and the State Department of Health.

Since July 1, 1947, eligibility for Emergency Maternity and Infant Care for the wives and infants of servicemen in the first four pay grades include:

1. The completion of all maternity and infant care for wives or infants for whom initial care was authorized prior to June 30, 1947.
2. Maternity care authorized after June 30, 1947, if the mother was eligible under the program as of June 30, 1947, even though she may apply for care subsequent to that date.
3. Infant care authorized after June 30, 1947, if the *mother or infant* was eligible for care under the program as of June 30, 1947. For example, if the wife of an enlisted man in the eligible pay grades became pregnant before June 30, 1947, she would be eligible to apply for and receive services under the EMIC program until 6 weeks postpartum, and her infant would be eligible for service provided under the program until 1 year of age.

#### *Educational*

- A. Group instruction.
  1. Motherhood classes
  2. Midwife classes

- B. Literature available for distribution
1. Prenatal care
  2. Infant care
  3. The Child from One to Six
- C. Films in the field of maternal and child health are available for loan from the State Department of Health to schools and interested groups.

### Consultation

Consultation is available from the Maternal and Child Health division of the State Department of Health, to schools on planning school health programs and nursing procedures and nursing techniques and to institutions on standards for facilities and care of maternity patients, full term and premature infant, and pediatric patients.

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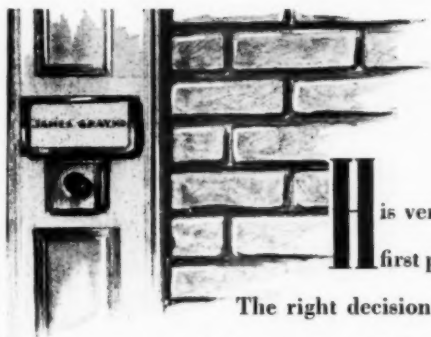
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Dr. E. Payne Palmer, Sr., on behalf of the Arizona Division of the American Cancer Society, extends a cordial invitation to all members of the Arizona State Medical Association to attend a luncheon at 12:00 Noon, May 18, 1948 in the Continental Room of Hotel Westward Ho, honoring Dr. Charles S. Cameron, Acting Medical and Scientific Director of the American Cancer Society and Dr. E. Cuyler Hammond, Director, Statistical Research Department of the American Cancer Society.

The Cancer Society hopes that all physicians will attend as its guests. Please make your reservations not later than May tenth through Dr. E. Payne Palmer, Sr., Chairman of the Executive Board of the Arizona Division of the American Cancer Society, 611 Professional Building, Phoenix, Arizona.

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